

9 anti-patterns

for node.js teams

Jeff Harrell
@juxtajeff



Node first went live on [paypal.com](#) in 2013.
Since:

- **35** apps live (marketing, signup, account, payments, etc).
- **400** new JavaScript engineers
- **500,000** npm installs per day (internally)

Made a good deal of mistakes to learn from

A close-up photograph of several vintage suitcases stacked together. The suitcases are made of dark brown leather with visible grain and some wear. Metal straps and buckles are used to secure the lids. The lighting is dramatic, highlighting the texture of the leather and the metallic hardware.

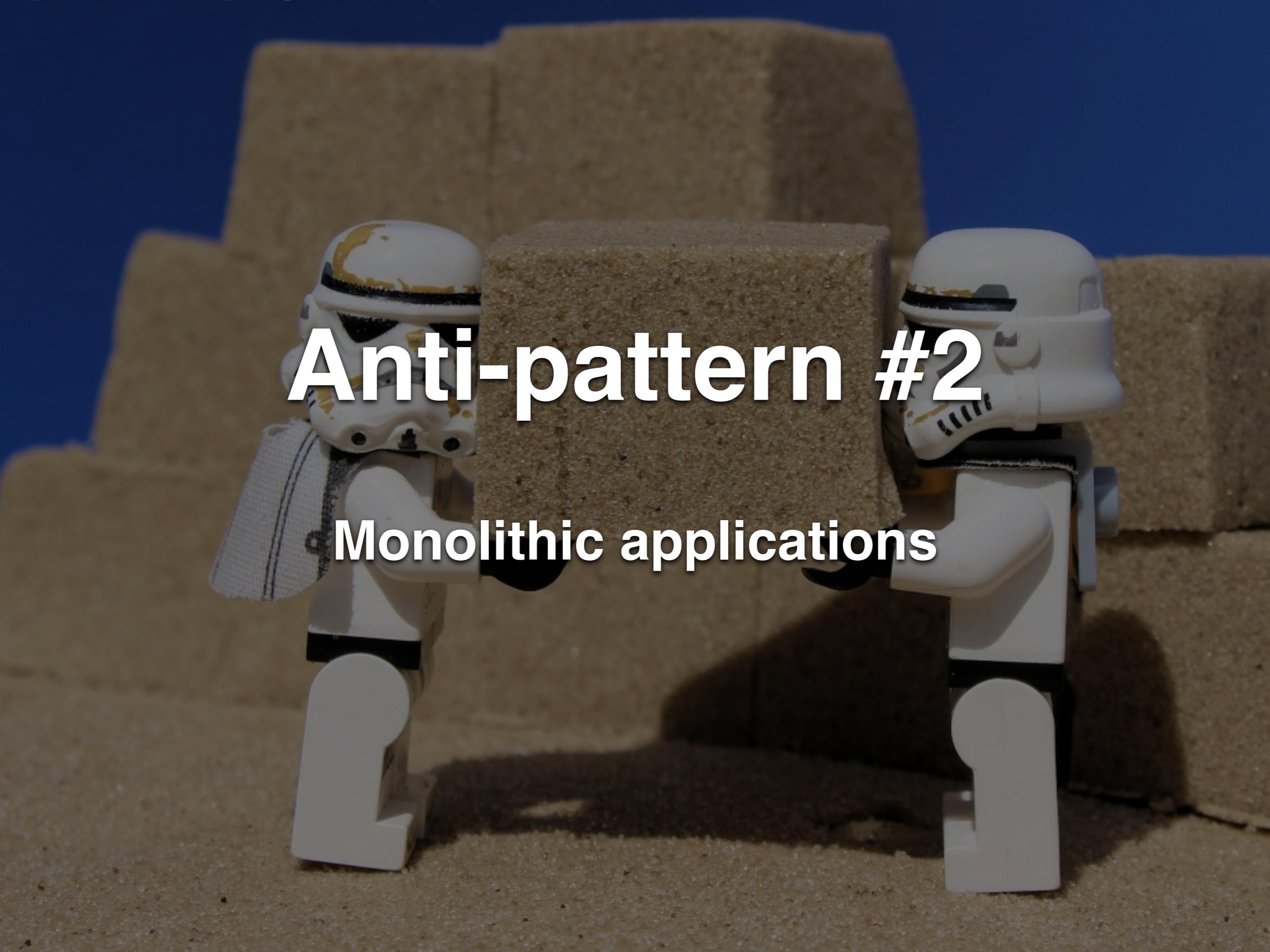
Anti-pattern #1

Baggage from your previous technology

- "Node doesn't support x. It won't work"
- "How do I deal with npm version conflicts?"
- "Can't let the app restart. It takes too long"

Leave your baggage behind.

Except when you're flying

A photograph of two white LEGO Stormtrooper minifigures standing side-by-side. They are wearing their characteristic white armor with black stripes. Behind them is a large, brown, textured cardboard cutout of a Christian cross. The background is a solid blue.

Anti-pattern #2

Monolithic applications

- Use an internal npm instance
- Publish modules vs. embedding functionality
- Don't overload modules – compose them

Prefer different user, credit card and bank modules

Avoid a single “shared” module

Build with many blocks, not one.

A photograph of a vast field filled with numerous round hay bales. In the distance, a large, white, multi-story barn is visible, surrounded by trees and a few small buildings. The sky is overcast and grey.

Anti-pattern #3

Googling “How to do x in JavaScript”

- jQuery results dominate search engines
- Understand ES5
- Be aware of what's coming in ES6

Learn JavaScript before diving in.

A pug dog is standing on its hind legs, looking up towards the camera with a slightly tilted head. The dog has a light brown coat with dark brown patches around its eyes and ears. It is wearing a dark harness. The background is a solid dark blue.

Anti-pattern #4

Handling errors

- Use an Error object, not a string
- Throwing is for programmer errors
- Restart on uncaught exception vs ignoring it

Error cases are hard.

Make sure to deal with them

A large, multi-colored spool of rope is positioned on the left side of the frame, its coils filling most of the upper half. To its right is a dark-colored Ford Focus hatchback. The car's front headlight, grille with the Ford logo, and a license plate reading "J482 L:TA" are visible. The background shows a building with large windows.

Anti-pattern #5

Wrapping everything in promises

- Use for the right reasons (not throw or waterfall)
- Modules should expose callback interfaces
- Use promises sparingly in hot code

27% of CPU time spent in promise execution

Callbacks.

Seriously

Anti-pattern #6

Git URLs in your package.json

- Git URLs don't fully leverage semver
- Weird caching issues
- Unstable state (akin to force overwriting in npm)

Publish to npm.

Set it up internally and use it

A photograph of a desk in a home office setting. The desk is cluttered with various items: a computer monitor on the left, a keyboard in the center, several books stacked on the right, and a large pile of papers and documents scattered across the surface. A pen lies on top of a book in the foreground. The background shows a window with a view of trees and a lamp on a shelf.

Anti-pattern #7

Sloppy async code

- Understand control flow patterns
- Don't create crazy waterfalls

Hoist functions

Use promises (appropriately)

Use async

- Callback with code afterwards, but no return

```
if (true) {  
    callback();  
}
```

```
fallback();
```

Use good async patterns.

Queue funny mis-ordered async sentence

Anti-pattern #8

Having node do *everything*

- SSL termination should be done by nginx
- Heavy encryption is not for node
- Don't bind directly to port 80/443

“How do I enable gzip?”

“How do I add an SSL cert to my app?”

Best tool, meet job.

A photograph of a flock of sheep grazing in a green field. In the background, there are several stone walls and a wooden fence. The sheep are of various colors, including white, brown, and black. The lighting suggests it's either morning or late afternoon.

Anti-pattern #9

Ignoring the node ecosystem

- npm has a wealth of pre-written code
- Get updates from community, e.g. Node Security
- Conferences like this

Embrace your new community.

Warning: May contain drama

Thanks!

Q&A is over drinks later!

Photo Credits

1. <https://www.flickr.com/photos/11334694@N00/268023465/>
2. <https://www.flickr.com/photos/14125773@N00/14205159881/>
3. <https://www.flickr.com/photos/60364452@N00/3921008904/>
4. <https://www.flickr.com/photos/83099438@N00/5902730038>
5. <https://www.flickr.com/photos/82402200@N00/523497824/>
6. <https://www.flickr.com/photos/48553010@N00/113694992/>
7. <https://www.flickr.com/photos/46889122@N03/4304137088/>
8. <https://www.flickr.com/photos/39039882@N00/5189290606/>
9. <https://www.flickr.com/photos/43145783@N00/1852428153/>