

# This.dot State of JS Frameworks Update



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12 Feb 2019

# About Michael Dawson

## IBM Community Lead for Node.js



- Active Node.js community member

- Collaborator
- Node.js Technical Steering Committee TSC Chair
- Community Committee member
- Involved in many Working group(s)/Teams

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# Releases

- Going EOL

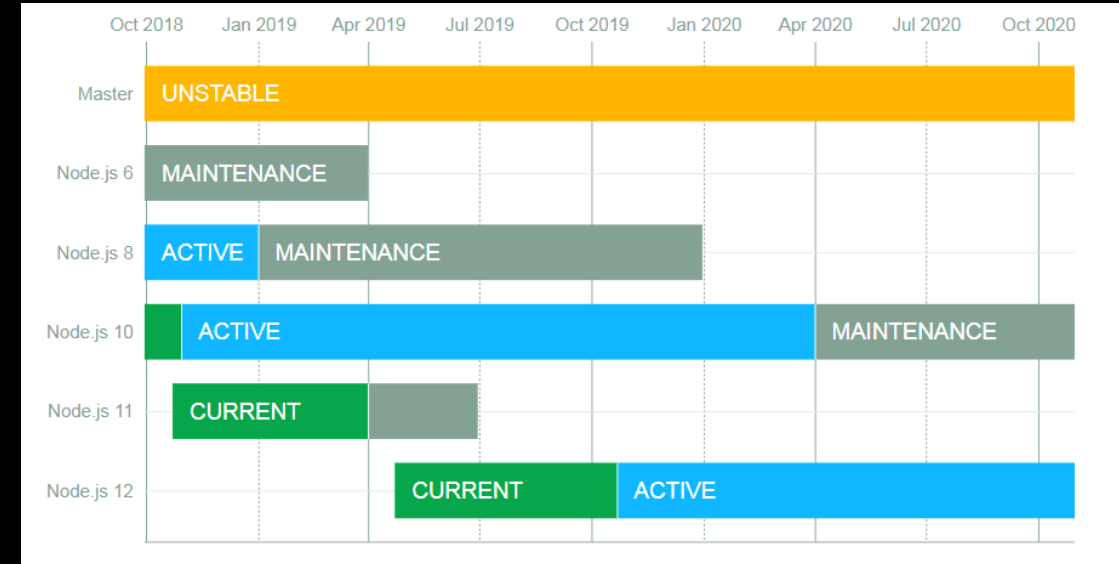
- Node.js 6.X EOL – April 2019

- LTS Releases

- Node.js 8.X – Early maintenance transition
- Node.js 10.X
  - Performance
  - npm 6.4
  - http/2
  - N-API (support across all LTS release lines)
- Node.js 12.X – April 2019

- Current - Node.js 11.X

- V8 version 7.0
- Workers without a flag (still experimental)



<https://github.com/nodejs/Release>

# Key New Features in 10.X

- **N-API - SIMPLIFYING NODE.JS DEVELOPMENT AND DEPLOYMENT!**

- Available in all LTS releases
- Stable in 10.X, 8.X, (doc only experimental in 6.X)

<https://github.com/nodejs/abi-stable-node> <https://github.com/nodejs/node-addon-api>

- HTTP/2

- Request/Response Multiplexing
- Efficient compression
- Server push

<https://blog.risingstack.com/node-js-http-2-push/>

- Open SSL 1.1.0

- Open SSL 1.1.1 has recently landed in master
- Unfortunately TLS 1.3 is not guaranteed

# Features In Progress

- Workers
  - Experimental in Core
- Node Report
  - Experimental in core
- ES6 Modules
- Core Promise APIs
  - Experimental in core (ex fs)
  - Validate approach
- Async Hooks
  - Experimental in core
  - Formalization of terminology

[https://nodejs.org/api/worker\\_threads.html](https://nodejs.org/api/worker_threads.html)

<https://www.npmjs.com/package/node-report>

<https://github.com/nodejs/modules>

[https://nodejs.org/api/fs.html#fs\\_fs\\_promises\\_api](https://nodejs.org/api/fs.html#fs_fs_promises_api)

<https://github.com/nodejs/diagnostics/tree/master/async-context/slide-decks>

# Workers

[https://nodejs.org/api/worker\\_threads.html](https://nodejs.org/api/worker_threads.html)

- Based on Web Workers ([https://developer.mozilla.org/en-US/docs/Web/API/Web\\_Workers\\_API/Using\\_web\\_workers](https://developer.mozilla.org/en-US/docs/Web/API/Web_Workers_API/Using_web_workers))
- No flag needed in 11.7 or later but still Experimental
- Each thread is separate JavaScript environment
- Data can be exchanged through messaging:
  - Object cloning
    - structured clone algorithm
  - Handoff (transferList/ArrayBuffer)
  - Memory sharing – SharedArrayBuffer/Atomics
    - [https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global\\_Objects/SharedArrayBuffer](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/SharedArrayBuffer)
    - [https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global\\_Objects/Atomics](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Atomics)
- Cannot transfer handles
- Re-use/Pooling is recommended

# Workers

```
const workers = require('worker_threads');

if (workers.isMainThread) {
  const worker1 = new workers.Worker(__filename, { data1: '1234' });
  const worker2 = new workers.Worker(__filename, { data2: '4567' });

  worker1.on('message', (message) => {
    console.log('parent:' + message);
  });

  worker2.on('message', (message) => {
    console.log('parent:' + message);
  });

  worker2.postMessage('wakeup');
} else {
  workers.parentPort.postMessage('running');
  workers.parentPort.on('message', (message) => {
    console.log('worker:' + message + ':' + workers.threadId);
    workers.parentPort.postMessage(message);
  });
}
```

```
parent:running
parent:running
worker:wakeup:2
parent:wakeup
```

# Report

- Initially an NPM module <https://www.npmjs.com/package/node-report>
- Now integrated into core in master (Experimental)

<https://nodejs.org/docs/latest/api/report.html>

--experimental-report

--diagnostic-report-directory=directory  
--diagnostic-report-filename=filename  
--diagnostic-report-on-fatalerror  
--diagnostic-report-on-signal  
--diagnostic-report-signal=signal  
--diagnostic-report-uncaught-exception  
--diagnostic-report-verbose

```
process.report.getReport([err])  
process.report.setDiagnosticReportOptions([options]);  
process.report.triggerReport([filename][, err])
```



# Report

report.20190129.200907.114.001.jsonn



```
node --experimental-report --diagnostic-report-uncaught-exception test.js
```

```
throw new Error('test')
```

# But its not only about Features

- Teams, Working Groups and Strategic Initiatives
  - Package Maintenance (<https://github.com/nodejs/package-maintenance>)
  - Python 3 migration
  - Tooling
  - Website re-design
  - Mentoring
  - User Feedback
  - Internationalization
  - Security
  - Diagnostics
  - Build
  - Automation
  - Benchmarking
  - Release
  - Application Showcase

Building the Safety Net  
Growing Involvement  
Leveraging better information  
Supporting our end users  
Makings things easier

<https://github.com/nodejs/TSC/blob/master/Strategic-Initiatives.md>

<https://github.com/nodejs/community-committee/blob/master/STRATEGIC-INITIATIVES.md>

# Bringing Node.js and JS Foundation together

- <https://medium.com/@nodejs/the-node-js-foundation-and-js-foundation-announce-an-intent-to-merge-a-message-from-the-boards-8a2e4a5cbd2b>
- <https://github.com/nodejs/bootstrap>

So What's Next?



It's what YOU make it!

Meet us in GitHub



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