

# Node.js 16 ChangeLog

LTS ‘Gallium’

Current

16.14.2 16.14.1 16.14.0 16.13.2 16.13.1 16.13.0

16.12.0 16.11.1 16.11.0 16.10.0 16.9.1 16.9.0 16.8.0 16.7.0 16.6.2 16.6.1 16.6.0

16.5.0 16.4.2 16.4.1 16.4.0 16.3.0 16.2.0 16.1.0 16.0.0

- Other Versions
  - 17.x
  - 15.x
  - 14.x
  - 13.x
  - 12.x
  - 11.x
  - 10.x
  - 9.x
  - 8.x
  - 7.x
  - 6.x
  - 5.x
  - 4.x
  - 0.12.x
  - 0.10.x
  - io.js
  - Archive

## 2022-03-17, Version 16.14.2 ‘Gallium’ (LTS), @richardlau

This is a security release.

### Notable Changes

Update to OpenSSL 1.1.1n, which addresses the following vulnerability:

- Infinite loop in `BN_mod_sqrt()` reachable when parsing certificates (High)(CVE-2022-0778) More details are available at <https://www.openssl.org/news/secadv/20220315.txt>

### Commits

- [3924618c74] - **deps:** update archs files for OpenSSL-1.1.1 (Hassaan Pasha) #42352
- [7a6a870d58] - **deps:** upgrade openssl sources to OpenSSL\_1\_1\_1n (Hassaan Pasha) #42352

- [c533b430f4] - **test**: fix tests affected by OpenSSL update (Michael Dawson) #42352

## 2022-03-15, Version 16.14.1 ‘Gallium’ (LTS), @daniel-leadams

### Notable changes

- **doc**:
  - add release key for Bryan English (Bryan English) #42102

### Commits

- [2a24e763d5] - **async\_hooks**: fix imports in context example (Yash Ladha) #39229
- [c4a296f59b] - **benchmark**: enable no-empty ESLint rule (Rich Trott) #41831
- [abe2eb9fc0] - **benchmark**: avoid input param manipulation (Jithil P Ponnann) #41741
- [2c566a9830] - **benchmark**: use Object.hasOwn() instead of hasOwnProperty() (Rich Trott) #41769
- [b77e72ab12] - **benchmark**: replace hasOwnProperty() with Object.hasOwn() (Rich Trott) #41724
- [ec72cb4019] - **benchmark**: remove unreachable code from crypto/hash-stream-creation (Rich Trott) #41535
- [14bb6f97f0] - **buffer**: fix atob/btoa no-arg case (Benjamin Gruenbaum) #41478
- [79e2ab2a67] - **build**: remove windows-2022 from v16.x actions (Danielle Adams) #42299
- [2893b4c85a] - **build**: check if python is a executable program (himself65) #36696
- [5e4fc04821] - **build**: enable zoslib installation on z/OS (alexcfyung) #41493
- [1e3c9ebaae] - **build**: fix libuv builds for android aarch64 (Darshan Sen) #41555
- [46f714f92a] - **crypto**: check return code from EVP\_DigestUpdate (Michael Dawson) #41800
- [33abbf9f21] - **crypto**: fix webcrypto.subtle signature (Antoine du Hamel) #41761
- [faceae486b] - **crypto**: revise variables for const use instead of let (Rich Trott) #41614
- [fe0f9dc611] - **crypto**: remove wildcard options for checkEmail (Tobias Nießen) #41599
- [188c3ab918] - **crypto**: adjust types for getRandomValues (LiviaMedeiros) #41481
- [1ef28f1a3d] - **crypto**: remove checkIP options argument (Tobias Nießen)

- #41571
- [74c0464572] - **deps**: upgrade npm to 8.5.0 (npm-robot) #41925
- [b5783288d1] - **deps**: upgrade npm to 8.4.1 (npm-robot) #41836
- [2b7c4b4afe] - **deps**: upgrade npm to 8.3.2 (npm team) #41621
- [906247933c] - **dgram**: remove unreachable connectState assign (Rongjian Zhang) #38590
- [330c1bc518] - **doc**: add comments to empty blocks in worker\_threads text (Rich Trott) #41831
- [125ed0c6b0] - **doc**: remove empty block from console.timeEnd() example (Rich Trott) #41831
- [34d6f8e793] - **doc**: use the same case as the section heading (Mestery) #41876
- [fd28d252fa] - **doc**: use Oxford comma in crypto docs (Tobias Nießen) #41875
- [bf99ef8b57] - **doc**: use sentence case in readme introduction (Mestery) #41874
- [b15d9c2cc6] - **doc**: add missing space before hyphen (Mestery) #41873
- [77685d5ab0] - **doc**: add stream pipelining note on Http usage (Rafael Silva) #41796
- [c7bae97755] - **doc**: improve SSL\_OP\_PRIORITIZE\_CHACHA description (Tobias Nießen) #41866
- [5cd38a4ff5] - **doc**: add missing commas in cluster docs (Tobias Nießen) #41865
- [cf6b5e0e33] - **doc**: add history information for Corepack (Antoine du Hamel) #41813
- [c742a1cc4d] - **doc**: feature management proposal (Michael Dawson) #41420
- [3f000a2627] - **doc**: add overhead hints for heap snapshot generation (Gerhard Stöbich) #41822
- [42c0a8353e] - **doc**: fix X509 CA acronym capitalization (Tobias Nießen) #41841
- [f5b0a3be12] - **doc**: use sentence case for X509 error codes header (Tobias Nießen) #41829
- [20d8fd1a83] - **doc**: add initial version of maintaining-http.md (Michael Dawson) #41798
- [077fcee008] - **doc**: add registry numbers for Electron 19 and 20 (Keeley Hammond) #41814
- [44b6927179] - **doc**: add note about resource type in async\_hooks (Tony Gorez) #41797
- [1be701c9ca] - **doc**: use example.com for examples (Ateş Göral) #41827
- [4660c1fa7b] - **doc**: align tls port types with net port types (Tobias Nießen) #41799
- [5cd8bdc4d7] - **doc**: use UDPv4/UDPv6 consistently with TCPv4/TCPv6 (Tobias Nießen) #41824
- [3ef05a0216] - **doc**: improve wording surrounding TLS 1.3 ciphers (Tobias Nießen) #41778

- [51d955368e] - **doc**: add format-md step to release guide (Danielle Adams) #41809
- [8f00e5dcf7] - **doc**: add v16 changelog link to iojs changelog (Danielle Adams) #41808
- [4f194f3094] - **doc**: add security-steward rotation information (Michael Dawson) #41707
- [14ea8fcba8] - **doc**: use Object.hasOwnProperty() in util doc (Rich Trott) #41780
- [9f77692491] - **doc**: remove section on “recent” ECDH changes (Tobias Nießen) #41773
- [211a3c4c4c] - **doc**: clarify that import also uses main (Ben McCann) #41720
- [20d9c4a2c5] - **doc**: update modules.md wording (Tobias Hernstvig) #41728
- [e209f53ba2] - **doc**: update Mesteery email (Mestery) #41683
- [db1ce43173] - **doc**: avoid incomplete sentence in cluster docs (Tobias Nießen) #41701
- [ee79e53821] - **doc**: fix typo in contributing guides (Yoshiki Kurihara) #41723
- [9616fd5913] - **doc**: improve docs to give descriptive info for the platform property (Harshil jain) #41650
- [4d8ee8e3cd] - **doc**: fix link to npm documentation (Antoine du Hamel) #41712
- [018ec32535] - **doc**: clarify treatment of non-string base in URL() (Rich Trott) #41685
- [92e6cf03fe] - **doc**: fix typo in `technical-priorities.md` (Akhil Marsonya) #41694
- [071fef50e5] - **doc**: remove unadvisable cluster example (Tobias Nießen) #41668
- [b63fb0ffb8] - **doc**: document flow for supporting type generation (Michael Dawson) #41464
- [364811aa8a] - **doc**: clarify parameter for `napi_get_cb_info` (Michael Dawson) #41635
- [1bd286e978] - **doc**: revise `url.resolve()` text (Rich Trott) #41661
- [59f95fe4dc] - **doc**: clarify treatment of non-string argument to `new URL()` (Rich Trott) #41658
- [3e93cc392e] - **doc**: fix documentation for `MODULE_NOT_FOUND` and `ERR_MODULE_NOT_FOUND` (Antoine du Hamel) #41645
- [b9d1cb7f8a] - **doc**: improve TLS/SSL introduction (Tobias Nießen) #41649
- [5d9c83e2e9] - **doc**: modernize and simplify cluster example (Tobias Nießen) #41626
- [d5efecd64d] - **doc**: simplify `readline/stdin` text (Rich Trott) #41583
- [931be52589] - **doc**: suggest worker threads in cluster docs (Tobias Nießen) #41616
- [b2a4614a0d] - **doc**: add 16 and 17 to previous versions (Antoine du Hamel) #41646

- [5f0a017a02] - **doc**: improve 'hex' Buffer decoding description and examples (Giora Guttsait) #41598
- [0805068add] - **doc**: add note for handling signal events in trace events (Gabriel Trujillo) #41438
- [0388b9afc3] - **doc**: demonstrate dangers of `buffer.slice()` (Shalvah) #41628
- [3cdd1d634b] - **doc**: add missing word in cluster.workers details (Tobias Nießen) #41624
- [5d94bc676e] - **doc**: fix `async_hooks` example in api docs (Akhil Marsonya) #41609
- [39f52e1130] - **doc**: fix deprecated alias description in cluster (Tobias Nießen) #41618
- [55714cc777] - **doc**: update `timingSafeEqual` error case (Alex Agranov) #41507
- [9f8e442dc7] - **doc**: simplify `util.TextDecoder` example (Rich Trott) #41574
- [57dc5956b1] - **doc**: move Mesteery to collaborators (Tobias Nießen) #41597
- [10320c2965] - **doc**: fix cjs example code for `process.arch` (Job) #41593
- [f33e831fe3] - **doc**: remove redundant `await` calls from stream docs (Giora Guttsait) #41592
- [1cf74beb57] - **doc**: make contributing info more discoverable (Michael Dawson) #41408
- [214cf17db9] - **doc**: recommend package exports instead of requiring folders (Antoine du Hamel) #41381
- [5c387a0d75] - **doc**: edit `async_context` context loss text (Rich Trott) #41550
- [01283f6b25] - **doc**: use sentence case for Web Crypto headers (Tobias Nießen) #41577
- [6b6d0c4914] - **doc**: make Web Crypto example spec compliant (Tobias Nießen) #41556
- [8772d332d7] - **doc**: do not reference SSL when discussing SNI (Tobias Nießen) #41549
- [82042d0094] - **doc**: fix typos in `esm.md` (Yu) #41499
- [ff0069dc3e] - **doc**: adjust assignment in condition in stream doc (Rich Trott) #41510
- [1128b1c216] - **doc**: improve Web Crypto headings related to ECC (Tobias Nießen) #41542
- [a6758d12e3] - **doc**: clarify module system selection (Antoine du Hamel) #41383
- [db17a529a8] - **doc**: add release key for Bryan English (Bryan English) #42102
- [f2ca172a08] - **doc**: remove statement about (EC)DHE performance (Tobias Nießen) #41528
- [227dea8dc1] - **domain**: pass opts to `EventEmitter.init` (Chen Gang) #41414

- [bd717064b0] - **esm**: improve validation of resolved URLs (Jacob Smith) #41446
- [e747ef5e45] - **http2**: fix pseudo-headers order (ofir) #41735
- [2efe9cbd01] - **http2**: fix no response event on continue request (ofirbarak) #41739
- [7bf2be51b3] - **http2**: fix memory leak on nhttp2 hd threshold (Rafael Silva) #41502
- [acd8768802] - **lib**: add comments to empty catch statements (Rich Trott) #41831
- [c90bb7cd93] - **lib**: refactor to use `validateObject()` validator (Mohammed Keyvanzadeh) #41845
- [c93a9af82b] - **lib**: refactor source map stack trace prepare (Mohammed Keyvanzadeh) #41698
- [0f3287dc44] - **lib**: fix consistency of methods that emit warnings (Yoshiki Kurihara) #41249
- [7ee3cdf60a] - **lib**: remove erroneous JSDoc entry (Rich Trott) #41604
- [70f6554403] - **meta**: update AUTHORS (Node.js GitHub Bot) #41868
- [a44a8ff767] - **meta**: update AUTHORS (Node.js GitHub Bot) #41763
- [ba0ba7c4b2] - **meta**: update mailmap/AUTHORS info for existing collaborator (Rich Trott) #41750
- [30e3327b46] - **meta**: adjust mailmap/AUTHORS to reflect README change (Rich Trott) #41751
- [6d268fd32e] - **meta**: update AUTHORS (Node.js GitHub Bot) #41659
- [18e6316bf1] - **meta**: update AUTHORS (Node.js GitHub Bot) #41548
- [e1e059a698] - **perf\_hooks**: remove useless calls in Histogram (Michael Dawson) #41579
- [08b3bd2fc5] - **policy**: revise manifest.js to avoid empty blocks (Rich Trott) #41831
- [33f3391a8f] - **policy**: check for null instead of falsy in loop (Rich Trott) #41614
- [b8b8e0bce6] - **policy**: replace entries with keys (Mohammed Keyvanzadeh) #41482
- [ee61bc74b7] - **process**: unhandledRejection support more errors (Benjamin Gruenbaum) #41682
- [f066246729] - **process**: check for null instead of falsy in while loop (Rich Trott) #41614
- [77cb604c0d] - **process**: use `validateString` validator (Mohammed Keyvanzadeh) #41595
- [76281f9a81] - **process**: ignore `asyncId 0` in exception handler (Anatoli Papirovski) #41424
- [dacffd3e9c] - **repl**: check for precise values rather than falsy in loops (Rich Trott) #41614
- [5e595683ce] - **src**: slightly simplify `URLHost::ToString` (Anna Henningsen) #41747
- [206c370d03] - **src**: slightly simplify `V8CoverageConnection::GetFilename` (Anna Henningsen) #41748

- [1cfc63ebe3] - **src**: fix typo in js\_native\_api\_v8.cc (Caio Agiani) #41764
- [aebd82ea7c] - **stream**: remove empty block (Rich Trott) #41831
- [46ed078607] - **stream**: resume stream on drain (Robert Nagy) #41848
- [363c760c85] - **stream**: check for null instead of falsy in loops (Rich Trott) #41614
- [4f4fec4b22] - **stream**: rename unknown primordial (Mohammed Keyvanzadeh) #40622
- [1425e75093] - **stream**: avoid function call where possible (Rich Trott) #41534
- [ecb52636a4] - **test**: renew certificates for specific test (Luigi Pinca) #42342
- [c8e59cbf9e] - **test**: enable no-empty ESLint rule (Rich Trott) #41831
- [20ec77688f] - **test**: remove eslint-disable comments from fixtures (Rich Trott) #41859
- [a8e41837cc] - **test**: remove test-worker-memory flaky designation (Rich Trott) #41867
- [673c1fd5ae] - **test**: avoid using Object.prototype methods directly on objects (Rich Trott) #41801
- [3690d3402d] - **test**: exclude ibm i tests until we resolve (Michael Dawson) #41812
- [1f65620543] - **test**: make worker-take-heapsnapshot non-flaky (Michael Dawson) #41684
- [badab79527] - **test**: mark test-fs-rmdir-recursive flaky on win (Michael Dawson) #41533
- [951d299aee] - **test**: make fs watch test more stable (Benjamin Gruenbaum) #41715
- [acea61ba8e] - **test**: fix typo in MessageChannel test (Tobias Nießen) #41746
- [081989b6b7] - **test**: replace commented out expectations with tests (Darshan Sen) #41667
- [639130e635] - **test**: use Object.hasOwn() where applicable (Rich Trott) #41664
- [cb362a3748] - **test**: remove unneeded test statement (Rich Trott) #41663
- [2b87f9784f] - **test**: remove error allowance in debugger test (Jithil P Ponnann) #41640
- [55fce66af6] - **test**: simplify test-gc-http-client (Luigi Pinca) #41620
- [b06c33b14b] - **test**: prepare tests for no-cond-assign ESLint rule (Rich Trott) #41614
- [950648db48] - **test**: move test-gc-http-client-onerror to sequential (Luigi Pinca) #41619
- [1d3ef115ca] - **test**: improve test coverage of internal/worker/io (Yoshiki Kurihara) #41511
- [122eb51c98] - **test**: add DataView test entry for whatwg (Mohammed Keyvanzadeh) #40622
- [2c813d825f] - **test**: improve util-format code coverage (Rich Trott) #41572

- [fab831a3fe] - **test**: fix typo in test\_\_js\_\_native\_\_api\_\_v8 (Tobias Nießen) #41584
- [9e7cfbbcd9] - **test**: add missing await in fs-rm/fs-rmdir tests (Benjamin Coe) #41545
- [a8558ecfcf] - **test**: add coverage for util.inspect() (Rich Trott) #41527
- [23fc205586] - **test**: avoid deep comparisons with literals (Tobias Nießen) #40634
- [63a67f8dad] - **timers**: check for nullish instead of falsy in loops (Rich Trott) #41614
- [788e77cb37] - **tools**: enable no-empty ESLint rule (Rich Trott) #41831
- [10e6c70d14] - **tools**: update lint-md-dependencies to rollup@2.67.0 (Node.js GitHub Bot) #41737
- [20cdf78fd8] - **tools**: update doc to rehype-stringify@9.0.3 (Node.js GitHub Bot) #41854
- [2eabfdd066] - **tools**: update eslint to 8.8.0 (Node.js GitHub Bot) #41738
- [9d23a27268] - **tools**: use Set instead of { [key]: true } object (Tobias Nießen) #41695
- [7e4d455fe4] - **tools**: add compile\_commands to ignore file (Yash Ladha) #41580
- [1cbdc984fb] - **tools**: use Set instead of { [key]: true } object (Tobias Nießen) #41675
- [dc854c4f38] - **tools**: fix typo in tools/code\_cache/README.md (Tobias Nießen) #41657
- [b17aa25f12] - **tools**: enable no-cond-assign-ESLint rule (Rich Trott) #41614
- [9601b8ddd6] - **tools**: update lint-md-dependencies to rollup@2.65.0 (Node.js GitHub Bot) #41638
- [cdbe291e5b] - **tools**: increase maximum line length to 120 characters (Rich Trott) #41586
- [7cbc472ed5] - **tools**: add missing .PHONY and .NOTPARALLEL targets in Makefile (Antoine du Hamel) #41515
- [6fccd66b34] - **tools**: update lint-md-dependencies (Node.js GitHub Bot) #41440
- [3163bd1ea0] - **tools**: bump eslint from 8.6.0 to 8.7.0 (Rich Trott) #41570
- [e439f32a4b] - **tools**: update doc to highlight.js@11.4.0 to-vfile@7.2.3 (Node.js GitHub Bot) #41441
- [66120564b2] - **tools,test**: enable no-prototype-builtins (Rich Trott) #41801
- [4aee98b03c] - **util**: use hasOwnProperty() primordial (Rich Trott) #41692
- [8218bab51d] - **util**: remove unused fast path in internal debuglog (Rich Trott) #41605
- [a4ad26d4dc] - **util**: check for null instead of flasy in loop (Rich Trott) #41614



## 2022-02-08, Version 16.14.0 ‘Gallium’ (LTS), @daniel-leadams

### Notable changes

**Importing JSON modules now requires experimental import assertions syntax** This release adds experimental support for the import assertions stage 3 proposal.

To keep Node.js ESM implementation as compatible as possible with the HTML spec, import assertions are now required to import JSON modules (still behind the `--experimental-json-modules` CLI flag):

```
import info from './package.json' assert { type: 'json' };
```

Or use dynamic import:

```
const info = await import('./package.json', { assert: { type: 'json' } });
```

Contributed by Antoine du Hamel and Geoffrey Booth #40250

### Other notable changes

- **async\_hooks:**
  - (SEMVER-MINOR) expose `async_wrap` providers (Rafael Gonzaga) #40760
- **child\_process:**
  - (SEMVER-MINOR) add support for URL to `cp.fork` (Antoine du Hamel) #41225
- **doc:**
  - add @Mesteery to collaborators (Mestery) #41543
  - add @bnb as a collaborator (Tierney Cyren) #41100
- **esm:**
  - (SEMVER-MINOR) graduate `captureRejections` to supported (James M Snell) #41267
  - (SEMVER-MINOR) add `EventEmitterAsyncResource` to core (James M Snell) #41246
- **events:**
  - (SEMVER-MINOR) propagate `weak` option for `kNewListener` (James M Snell) #40899
- **fs:**
  - (SEMVER-MINOR) accept URL as argument for `fs.rm` and `fs.rmSync` (Antoine du Hamel) #41132
- **lib:**
  - (SEMVER-MINOR) make `AbortSignal` cloneable/transferable (James M Snell) #41050
  - (SEMVER-MINOR) add `AbortSignal.timeout` (James M Snell) #40899

- **(SEMVER-MINOR)** add reason to AbortSignal (James M Snell) #40807
- **(SEMVER-MINOR)** add unsubscribe method to non-active DC channels (simon-id) #40433
- **(SEMVER-MINOR)** add return value for DC channel.unsubscribe (simon-id) #40433
- **loader:**
  - **(SEMVER-MINOR)** return package format from defaultResolve if known (Gabriel Bota) #40980
- **perf\_hooks:**
  - **(SEMVER-MINOR)** multiple fixes for Histogram (James M Snell) #41153
- **process:**
  - **(SEMVER-MINOR)** add `getActiveResourcesInfo()` (Darshan Sen) #40813
- **src:**
  - **(SEMVER-MINOR)** add `x509.fingerprint512` to crypto module (3nprob) #39809
  - **(SEMVER-MINOR)** add flags for controlling process behavior (Cheng Zhao) #40339
- **stream:**
  - **(SEMVER-MINOR)** add filter method to readable (Benjamin Gruenbaum) #41354
  - **(SEMVER-MINOR)** add isReadable helper (Robert Nagy) #41199
  - **(SEMVER-MINOR)** add map method to Readable (Benjamin Gruenbaum) #40815
  - deprecate thenable support (Antoine du Hamel) #40860
- **util:**
  - **(SEMVER-MINOR)** pass through the inspect function to custom inspect functions (Ruben Bridgewater) #41019
  - **(SEMVER-MINOR)** add numericSeparator to util.inspect (Ruben Bridgewater) #41003
  - **(SEMVER-MINOR)** always visualize cause property in errors during inspection (Ruben Bridgewater) #41002
- **timers:**
  - **(SEMVER-MINOR)** add experimental scheduler api (James M Snell) #40909
- **v8:**
  - **(SEMVER-MINOR)** multi-tenant promise hook api (Stephen Belanger) #39283

## Commits

- [336010341f] - **assert:** prefer reference comparison over string comparison (Darshan Sen) #41015
- [2d471e47a0] - **assert:** use stricter stack frame detection in `.ifError()`

- (Ruben Bridgewater) #41006
- [f788a47b8b] - **async\_hooks**: add missing initialization (Michael Dawson) #41288
  - [b688f201df] - **async\_hooks**: fix AsyncLocalStorage in unhandledRejection cases (Bradley Farias) #41202
  - [6af3e34b6b] - **Revert** “**async\_hooks**: merge resource\_symbol with owner\_symbol” (Darshan Sen) #40741
  - [85a02ec979] - **async\_hooks**: eliminate require side effects (Stephen Belanger) #40782
  - [078a0c996f] - **(SEMVER-MINOR) async\_hooks**: expose async\_wrap providers (Rafael Gonzaga) #40760
  - [4a09904d05] - **benchmark**: simplify http benchmarker regular expression (Rich Trott) #38206
  - [bc48ed2834] - **benchmark**: fix benchmark/run.js handling of -set (Rich Trott) #41334
  - [e68bf84e31] - **benchmark,test**: use Object.hasOwn() where applicable (Rich Trott) #41229
  - [799cf57581] - **buffer**: fix Blob constructor on various TypedArrays (Irakli Gozalishvili) #40706
  - [5c1dc5f307] - **build**: fix npm version detection (Michaël Zasso) #41575
  - [3e4d977c28] - **build**: fix node build failures in WSL Ubuntu (MrJithil) #41476
  - [6ffb1e878c] - **build**: fix workflow access to git history (Rich Trott) #41472
  - [c49a651e67] - **build**: start build on z/OS (alexcfyung) #41273
  - [c65ac72b6c] - **build**: use list for mutable retval rather than tuple (Rich Trott) #41372
  - [ff48705372] - **build**: remove Python 2 workaround (Rich Trott) #41357
  - [c10fcb1f05] - **build**: improve readability of texts in workflows (Mestery) #40988
  - [93450e5e8e] - **build**: use ‘<(python)’ instead of ‘python’ (Cheng Zhao) #41146
  - [0b411c436a] - **build**: fix comment-labeled workflow (Mestery) #41176
  - [7756e1c692] - **build**: use gh cli in workflows file (Mestery) #40985
  - [d3289b2506] - **build**: fix commit-queue-rebase functionality (Rich Trott) #41140
  - [860d552431] - **build**: skip documentation generation if no ICU (Rich Trott) #41091
  - [c8625d18ba] - **build**: re-enable V8 concurrent marking (Michaël Zasso) #41013
  - [74557c3ac1] - **build**: add --without-corepack (Jonah Snider) #41060
  - [f826c866e9] - **build**: fail early in test-macos.yml (Rich Trott) #41035
  - [535bb5fb6b] - **build**: add tools/doc to tools.yml updates (Rich Trott) #41036
  - [20c4c6aa72] - **build**: update Actions versions (Mestery) #40987
  - [70fd4a15fc] - **build**: set persist-credentials: false on workflows (Rich

- Trott) #40972
- [b72e50e5ef] - **build**: add OpenSSL gyp artifacts to .gitignore (Luigi Pinca) #40967
  - [066e0d6b44] - **build**: remove legacy -J test.py option from Makefile/vcbuild (Rich Trott) #40945
  - [f5233b004a] - **build**: ignore unrelated workflow changes in slow Actions tests (Rich Trott) #40928
  - [a905dfe8d5] - **build**: remove extraneous quotation marks from commit body (Rich Trott) #40963
  - [6971e5720b] - **build**: fix branch name for lint-md-dependencies update (Rich Trott) #40924
  - [a09bc8bf1d] - **build**: fix make invocation in tools.yml (Rich Trott) #40890
  - [323c058fed] - **build**: fix tools.yml errors (Rich Trott) #40870
  - [e354464c3e] - **build**: add GitHub Action to update tools modules (Rich Trott) #40644
  - [bfbb7fc24a] - **build,tools**: automate enforcement of emeritus criteria (Rich Trott) #41155
  - [fc38d15483] - **build,tools,win**: trim unused VCBUILD\_PYTHON\_LOCATION variable (David Sanders) #41235
  - [9086338549] - **child\_process**: queue pending messages (Erick Wendel) #41221
  - [d25b17279f] - **child\_process**: revise argument processing (Rich Trott) #41280
  - [15e5d7acf4] - **(SEMVER-MINOR) child\_process**: add support for URL to cp.fork (Antoine du Hamel) #41225
  - [06b775cd5c] - **cluster**: use linkedlist for round\_robin\_handle (twchn) #40615
  - [a40989faea] - **crypto**: fix error capture when loading engine (Tobias Nießen) #41187
  - [3055edec2f] - **crypto**: add missing null check (Michael Dawson) #40598
  - [cf3423d8b6] - **crypto**: trim input for NETSCAPE\_SPKI\_b64\_decode (Shelley Vohr) #40757
  - [e60841b598] - **crypto**: throw errors in SignTraits::DeriveBits (Tobias Nießen) #40796
  - [00fd7d28ef] - **crypto**: fix build without scrypt (Martin Jansa) #40613
  - [ebc370cac8] - **deps**: V8: cherry-pick cc9a8a37445e (Gus Caplan) #41825
  - [a59ade62cf] - **deps**: upgrade npm to 8.3.1 (npm-robot) #41503
  - [9dd097325a] - **deps**: V8: cherry-pick 3b6b21f595f6 (Michaël Zasso) #41457
  - [af6f1d512d] - **deps**: upgrade to libuv 1.43.0 (Colin Ihrig) #41398
  - [875fa40960] - **deps**: upgrade npm to 8.3.0 (npm team) #41127
  - [3c13bbd8aa] - **deps**: upgrade npm to 8.2.0 (npm team) #41065
  - [6c7088890e] - **deps**: update Acorn to v8.6.0 (Michaël Zasso) #40993
  - [e092fdebea] - **deps**: upgrade npm to 8.1.4 (npm team) #40865
  - [3e388ef28d] - **deps**: V8: cherry-pick cced52a97ee9 (Ray Wang) #40656
  - [58889e2463] - **deps**: V8: cherry-pick 7ae0b77628f6 (Ray Wang) #40882

- [7cbbe0d982] - **deps:** V8: cherry-pick cced52a97ee9 (Ray Wang) #40656
- [f260bbc0ab] - **deps:** V8: cherry-pick 7ae0b77628f6 (Ray Wang) #40882
- [a3aa9bcacf8] - **deps:** update to uvwasi 0.0.12 (Colin Ihrig) #40847
- [c0200e20a0] - **deps:** upgrade npm to 8.1.3 (npm team) #40726
- [036650e046] - **deps:** V8: backport 77599ffe0a74 (Lu Yahan) #41566
- [0b27486895] - **deps:** V8: cherry-pick e74d6918fb9f (Lu Yahan) #41566
- [77ad5dd0ff] - **deps:** V8: cherry-pick 471f862954f3 (Lu Yahan) #41566
- [dc6843cabe] - **deps:** V8: cherry-pick 3cab84c24723 (Lu Yahan) #41566
- [e391da45cf] - **deps:** V8: cherry-pick d8dc66f92169 (Lu Yahan) #41566
- [5aa45ae757] - **deps:** update ICU to 70.1 (Michaël Zasso) #40658
- [0466400d7a] - **deps:** update archs files for OpenSSL-1.1.1m+quic (Richard Lau) #41175
- [553246c1e4] - **deps:** upgrade openssl sources to OpenSSL\_1\_1\_1m+quic (Richard Lau) #41175
- [95c19c36a9] - **deps:** add -fno-strict-aliasing flag to libuv (Daniel Bevenius) #40631
- [ce525e9661] - **doc:** align links in table to top (nikoladev) #41396
- [1db154fa96] - **doc:** remove statement about client private keys (Tobias Nießen) #41505
- [7ba53103a5] - **doc:** fix typo in `onboarding.md` (Antoine du Hamel) #41544
- [0d009aebd5] - **doc:** add Mesteery to collaborators (Mestery) #41543
- [2bea4bd9ee] - **doc:** add missing word in `readable.read()` text (Rich Trott) #41524
- [d5ad2b7fcd] - **doc:** add missing YAML tag in `esm.md` (Antoine du Hamel) #41516
- [c914d95494] - **doc:** expand `fs.access()` mode parameter docs (Colin Ihrig) #41484
- [d4458162a4] - **doc:** correct `checkHost` behavior with wildcards etc (Tobias Nießen) #41468
- [dea8895091] - **doc:** remove extraneous colon in legacy subject (Tobias Nießen) #41477
- [e425f369ea] - **doc:** remove `SameValue` comparison reference (Rich Trott) #41460
- [30cb6948f1] - **doc:** update mailmap entries for mhdawson (Michael Dawson) #41437
- [2586f098ac] - **doc:** add guidance on order vulns are listed in (Michael Dawson) #41429
- [790898eaae] - **doc:** update output in inspector examples (David Sanders) #41390
- [00333fe737] - **doc:** add note regarding unfinished TLA (Antoine du Hamel) #41434
- [fe24cb2cd9] - **doc:** add reference for `===` operator in `assert.md` (Rich Trott) #41442
- [52a988bfb8] - **doc:** clarify `uncaughtException` origin for ESM (Antoine du Hamel) #41339

- [91c3e28018] - **doc:** revise HTTPRequestOptions text (Rich Trott) #41407
- [b281bf59ff] - **doc:** add reference for == and != operators (Rich Trott) #41413
- [66b90f9d02] - **doc:** add @RaisinTen to the TSC (Michael Dawson) #41419
- [14068f8728] - **doc:** update Abstract Equality Comparison text in assert.md (Rich Trott) #41375
- [c95151247a] - **doc:** fix example commands for REPLACEME updates (Richard Lau) #41269
- [04a81b3e21] - **doc:** document that `require.main` may be undefined (Antoine du Hamel) #41384
- [71bc352328] - **doc:** clarify entry point behavior when using loader hooks (Antoine du Hamel) #41304
- [add1184b74] - **doc:** clarify `require` behavior with non `.js` extensions (Antoine du Hamel) #41345
- [7618b551dc] - **doc:** revise frozen-intrinsics text (Rich Trott) #41342
- [41cfc32602] - **doc:** fix example description for `worker_threads` (Dmitry Petrov) #41341
- [46c38eb5fc] - **doc:** make pull-request guide default branch agnostic (Antoine du Hamel) #41299
- [1c0c140ae5] - **doc:** fix sync comment in observer snippet (Eric Jacobson) #41262
- [081f72e4c0] - **doc:** remove section about amending commits in PR guide (Thiago Santos) #41287
- [720fad8876] - **doc:** remove legacy in-page links in v8.md (Rich Trott) #41291
- [9eb8233bf6] - **doc:** include stack trace difference in ES modules (Marcos Bérnago) #41157
- [f3b0dfc325] - **doc:** fix example in node-api docs (Michael Dawson) #41264
- [aa04a2c562] - **doc:** add usage recommendation for `writable._destroy` (Rafael Gonzaga) #41040
- [a6e7cf5bd4] - **doc:** make function signature comply with JSDoc comment (Rich Trott) #41242
- [e7d57ac2cc] - **doc:** align `maxHeaderSize` default with current value (Gil Pedersen) #41183
- [ad06e3d3e0] - **doc:** add `unhandledRejection` to strict mode (Colin Ihrig) #41194
- [11a5f7a81f] - **doc:** adding estimated execution time (mawaregetsuka) #41142
- [ba85147a33] - **doc:** fix syntax error in nested conditions example (Mateusz Burzyński) #41205
- [8be5b66201] - **doc:** fix closing parenthesis (AlphaDio) #41190
- [f0693cb5f9] - **doc:** add security steward on/offboarding steps (Michael Dawson) #41129

- [ac025f17b2] - **doc**: align module resolve algorithm with implementation (Qingyu Deng) #38837
- [f6bf74748d] - **doc**: update nodejs-sec managers (Michael Dawson) #41128
- [c4a5db6e2c] - **doc**: move style guide to findable location (Rich Trott) #41119
- [35d0a4eb92] - **doc**: fix comments in test-fs-watch.js (jakub-g) #41046
- [22970c67fc] - **doc**: document support building with Python 3.10 on Windows (Christian Clauss) #41098
- [f35bd5223f] - **doc**: add note about pip being required (Piotr Rybak) #40669
- [179886fa1d] - **doc**: remove OpenJSF Slack nodejs from support doc (Rich Trott) #41108
- [e401e6c1af] - **doc**: simplify major release preparation (Bethany Nicolle Griggs) #40816
- [ecc086cc7f] - **doc**: clarify escaping for ES modules (notroid5) #41074
- [7930725014] - **doc**: add @bnb as a collaborator (Tierney Cyren) #41100
- [6a9db2ebdb] - **doc**: add explicit declaration of fd with null val (Henadzi) #40704
- [084decdf8] - **doc**: expand entries for isIP(), isIPv4(), and isIPv6() (Rich Trott) #41028
- [3f6106c538] - **doc**: link to commit queue guide (Geoffrey Booth) #41030
- [c52ce19c80] - **doc**: specify that `message.socket` can be nulled (Luigi Pinca) #41014
- [341a999fdb] - **doc**: fix JSDoc in ESM loaders examples (Mestery) #40984
- [268771c85b] - **doc**: remove legacy -J test.py option from BUILDING.md (Rich Trott) #40945
- [90ac3dc85e] - **doc**: add information on suppressing initial break in debugger (Rich Trott) #40960
- [d9fc06b158] - **doc**: improve grammar in API description (Tobias Nießen) #40959
- [02e9c2e7fe] - **doc**: update BUILDING.md section on running tests (Rich Trott) #40933
- [9f14f66009] - **doc**: remove experimental abortcontroller flag (FrankQiu) #38968
- [d217809fba] - **doc**: clarify more optional parameters in node-api (Michael Dawson) #40888
- [dead21c68c] - **doc**: define “types”, “deno” community conditions (Guy Bedford) #40708
- [019b25fa5d] - **doc**: document optional params in napi\_get\_cb\_info (Michael Dawson) #40821
- [38f02dc4c1] - **doc**: improve README.md lede section (Rich Trott) #40837
- [1a2c80957b] - **doc**: add pref to using draft PR versus WIP label (Michael Dawson) #40824
- [e70c3616c8] - **doc**: tweak guidance for modules in core (Michael Dawson)

- #40601
- [c10b01e857] - **doc**: claim ABI version for Electron 18 (Keeley Hammond) #40768
- [7fba4e5819] - **doc**: fix transform stream example (Evan Lucas) #40777
- [a74673fc7c] - **doc**: fix linter-enforced formatting in crypto.md (Mohammed Keyvanzadeh) #40780
- [d9ae43ef0e] - **doc**: fix corepack grammar for `--force` flag (Steven) #40762
- [7f9bf21241] - **doc**: clarify getAuthTag with authTagLength (Tobias Nießen) #40713
- [fbf732de4f] - **doc**: fix order of announce work (Michael Dawson) #40725
- [ac56a114ad] - **doc**: add initial list of technical priorities (Michael Dawson) #40235
- [f47d6a37f5] - **doc**: fix lint re-enabling comment in README.md (Rich Trott) #40647
- [a9adbb680b] - **doc**: fix spelling of ‘WebAssembly’ (Geoffrey Booth) #40785
- [9e68c00d8e] - **doc**: format v8.md in preparation for stricter linting (Rich Trott) #40647
- [82facfbc3e] - **doc**: final round of markdown format changes (Rich Trott) #40645
- [fe1b6fb0b5] - **doc**: simplify CHANGELOG.md (Rich Trott) #40475
- [5c90975275] - **doc**: correct esm spec scope lookup definition (Guy Bedford) #40592
- [ce2dc48588] - **doc**: use GFM footnotes in BUILDING.md (Rich Trott) #40474
- [ab28dc5e7f] - **doc**: update maintaining ICU guide (Michaël Zasso) #40658
- [f4493c1691] - **doc**: format changelog for v16.13.2 (Danielle Adams) #41483
- [59d159f6c3] - **doc,lib,tools**: align multiline comments (Rich Trott) #41109
- [3cfe85615c] - **esm**: make `process.exit()` default to exit code 0 (Gang Chen) #41388
- [a0a8f4de58] - **esm**: reconcile JSDoc vs. actual parameter name (Rich Trott) #41238
- [a554821f67] - **(SEMVER-MINOR) esm**: working mock test (Bradley Farias) #39240
- [4e0502625b] - **esm**: refactor esm tests out of test/message (Geoffrey Booth) #41352
- [1b8169a842] - **(SEMVER-MINOR) esm**: add support for JSON import assertion (Antoine du Hamel) #40250
- [1280e191e2] - **events**: clarify JSDoc entries (Rich Trott) #41311
- [24b40b3b05] - **(SEMVER-MINOR) events**: graduate capturerejections to supported (James M Snell) #41267
- [3185772b66] - **events**: add jsdoc details for Event and EventTarget



- (James M Snell) #41274
- [b79fdd5775] - **(SEMVER-MINOR) events**: add EventEmitterAsyncResource to core (James M Snell) #41246
  - [78a8c1b0bd] - **(SEMVER-MINOR) events**: propagate weak option for kNewListener (James M Snell) #40899
  - [b671194b85] - **(SEMVER-MINOR) fs**: accept URL as argument for `fs.rm` and `fs.rmSync` (Antoine du Hamel) #41132
  - [66556b39e0] - **fs**: use async directory processing in `cp()` (Colin Ihrig) #41351
  - [f4cef533c3] - **fs**: correct param names in JSDoc comments (Rich Trott) #41237
  - [eaab8d0498] - **fs**: fix error codes for `fs.cp` (Antoine du Hamel) #41106
  - [67c6170dc7] - **fs**: fix `length` option being ignored during `read()` (Shinho Ahn) #40906
  - [0377edcceb] - **fs**: nullish coalescing to respect zero positional reads (Omar El-Mihilmy) #40716
  - [d3839041f5] - **http**: remove duplicate code (Shaw) #39239
  - [0bf829192a] - **http**: don't write empty data on req/res end() (Santiago Gimeno) #41116
  - [86bbb427ce] - **http**: add missing initialization (Michael Dawson) #40555
  - [be53296a1d] - **http**: change totalSocketCount only on socket creation/close (Subhi Al Hasan) #40572
  - [3c99a4d7c0] - **http2**: handle existing socket data when creating HTTP/2 server sessions (Tim Perry) #41185
  - [5356dfd296] - **inspector**: add missing initialization (Michael Dawson) #41022
  - [283f1e8721] - **lib**: fix linting warnings and errors (Danielle Adams) #41805
  - [c776c7c531] - **lib**: include return types in JSDoc (Rich Trott) #41130
  - [f6cf39a2d5] - **lib**: remove spurious JSDoc entry (Rich Trott) #41240
  - [a47fc90c1a] - **lib**: fix checking syntax of esm module (Qingyu Deng) #41198
  - [438b9cfe02] - **(SEMVER-MINOR) lib**: make AbortSignal cloneable/transferable (James M Snell) #41050
  - [eda57a9160] - **lib**: use consistent types in JSDoc @returns (Rich Trott) #41089
  - [f40e099e35] - **lib**: do not lazy load EOL in blob (Ruben Bridgewater) #41004
  - [157753bf26] - **(SEMVER-MINOR) lib**: add AbortSignal.timeout (James M Snell) #40899
  - [e08df49d7a] - **(SEMVER-MINOR) lib**: add reason to AbortSignal (James M Snell) #40807
  - [4bcff4c5f8] - **Revert "lib: use helper for readability"** (Darshan Sen) #40741
  - [4cb1e7c9c2] - **lib**: fix typos in lib code comments (Yoshiki) #40792
  - [5e606b54b7] - **(SEMVER-MINOR) lib**: add unsubscribe method to

non-active DC channels (simon-id) #40433

- [594fe5502d] - **(SEMVER-MINOR) lib**: add return value for DC channel.unsubscribe (simon-id) #40433
- [cf6379a543] - **lib,test,tools**: use consistent JSDoc types (Rich Trott) #40989
- [4814667189] - **lib,tools**: remove empty lines between JSDoc tags (Rich Trott) #41147
- [d422e585c8] - **loader**: fix package resolution for edge case (Gabriel Bota) #41218
- [694dc12fab] - **(SEMVER-MINOR) loader**: return package format from defaultResolve if known (Gabriel Bota) #40980
- [121199f971] - **meta**: move one or more collaborators to emeritus (Node.js GitHub Bot) #41456
- [9467aa9bcf] - **meta**: update AUTHORS (Node.js GitHub Bot) #41475
- [e83e41634a] - **meta**: correct my name in AUTHORS (Jacob Smith) #41444
- [8dfc1434c2] - **meta**: update AUTHORS (Node.js GitHub Bot) #41449
- [dc536f4d14] - **meta**: add required fields in issue templates (Rich Trott) #41378
- [5d5c52fa67] - **meta**: update AUTHORS (Node.js GitHub Bot) #41374
- [970de5331c] - **meta**: replace API docs issue template with form (Rich Trott) #41348
- [08f5c8d131] - **meta**: move one or more collaborators to emeritus (Node.js GitHub Bot) #41336
- [51e6ed014a] - **meta**: replace feature request template with form (Rich Trott) #41317
- [bb997ff494] - **meta**: update AUTHORS (Node.js GitHub Bot) #41322
- [9319fa3394] - **meta**: update node-api team name (Richard Lau) #41268
- [93b5a2781b] - **meta**: move one or more collaborators to emeritus (Node.js GitHub Bot) #41248
- [d3444a55aa] - **meta**: update AUTHORS (Node.js GitHub Bot) #41234
- [115775fd12] - **meta**: remove community-committee from CODEOWNERS (Rich Trott) #41169
- [5ac60276d6] - **meta**: move one or more collaborators to emeritus (Node.js GitHub Bot) #41154
- [f8c6055af0] - **meta**: move to emeritus automatically after 18 months (Rich Trott) #41155
- [7f3604aa5d] - **meta**: move silverwind to emeriti (Roman Reiss) #41171
- [d8dbced939] - **meta**: update AUTHORS (Node.js GitHub Bot) #41144
- [25d3103f38] - **meta**: update AUTHORS (Node.js GitHub Bot) #41088
- [714efe431c] - **meta**: move one or more TSC members to emeritus (Node.js GitHub Bot) #40908
- [f51ce33836] - **meta**: increase security policy response targets (Matteo Collina) #40968
- [23e925e1fb] - **meta**: add feature request label for issue template (Mestery) #40970

- [ad1056d29e] - **meta**: update AUTHORS (Node.js GitHub Bot) #40900
- [317cd3fc2b] - **meta**: update name and email (Viero Fernando) #40848
- [eb0106d61d] - **meta**: update AUTHORS (Node.js GitHub Bot) #40809
- [3a435a3328] - **meta**: edit GOVERNANCE.md for minor updates (Rich Trott) #40798
- [1626d17cbe] - **meta**: update AUTHORS (Node.js GitHub Bot) #40748
- [442ad8d787] - **module**: import assertions improvements (Geoffrey Booth) #40785
- [e7391ea1b3] - **module**: resolver & spec hardening /w refactoring (Guy Bedford) #40510
- [03490cb311] - **node-api**: add missing initialization of last error (Michael Dawson) #41290
- [375d04a455] - **node-api,doc**: document parms which can be optional (Michael Dawson) #41021
- [c021b385c8] - **(SEMVER-MINOR) perf\_hooks**: multiple fixes for Histogram (James M Snell) #41153
- [7b6db6df39] - **policy**: add missing JSDoc @param entry (Rich Trott) #41239
- [c60cff9091] - **(SEMVER-MINOR) process**: add `getActiveResourcesInfo()` (Darshan Sen) #40813
- [f0860bc3c8] - **process**: support hrtime in the snapshot (Joyee Cheung) #40649
- [ef337294cc] - **readline**: skip escaping characters again (Ruben Bridge-water) #41005
- [370bfda154] - **repl**: fix and extend require/import tab complete (Mestery) #40216
- [3c4e3c03ce] - **src**: gracefully handle errors in `GetX509NameObject` (Tobias Nießen) #41490
- [b4d245446f] - **src**: fix out-of-bounds check of serialization indices (JoostK) #41452
- [cb30038447] - **src**: do IWYU for some STL includes (David Sanders) #41236
- [fe4158aa4e] - **src**: split out async stack corruption detection from inline fn (Anna Henningsen) #41331
- [72921f4b31] - **src**: store native async execution resources as `v8::Local` (Anna Henningsen) #41331
- [59625f70ad] - **src**: guard slightly costly check in `MakeCallback` more strongly (Anna Henningsen) #41331
- [2ca37149ad] - **src**: fix limit calculation (Michael Dawson) #41026
- [5f01d03acc] - **src**: use a higher limit in the `NearHeapLimitCallback` (Joyee Cheung) #41041
- [7237bcc2d9] - **src**: reset error struct if error code is `napi_ok` (JckXia) #40552
- [9cc2bb75e5] - **src**: prevent extra copies of `TimerWrap::TimerCb` (Darshan Sen) #40665
- [bd9a6a0194] - **(SEMVER-MINOR) src**: add `x509.fingerprint512` to

- crypto module (3nprob) #39809
- [7681fd7d] - **src**: add and fix some preprocessor comments (Tobias Nießen) #40701
- [a9826b09d4] - (**SEMVER-MINOR**) **src**: add flags for controlling process behavior (Cheng Zhao) #40339
- [b1f785cd72] - **src,crypto**: remove uses of `AllocatedBuffer` from `crypto_sig` (Darshan Sen) #40895
- [807536c541] - **src,crypto**: use `ByteSource::ToBuffer()` in `crypto_dh` (Darshan Sen) #40903
- [51b86550ae] - **src,crypto**: remove `AllocatedBuffers` from `crypto_spkac` (Darshan Sen) #40752
- [cebf40396f] - **src,crypto**: refactor `crypto_tls.*` (Darshan Sen) #40675
- [df574f3109] - **src,doc**: add `SyntaxError` napi support (Idan Attias) #40736
- [5e890be360] - **stream**: remove always-false condition check (Rich Trott) #41488
- [ae30b391c2] - **stream**: fix error-path function call (Rich Trott) #41433
- [5d27f4acbb] - **stream**: remove unused function argument (Rich Trott) #41403
- [77c18680ae] - (**SEMVER-MINOR**) **stream**: add filter method to `Readable` (Benjamin Gruenbaum) #41354
- [7cef7699e3] - (**SEMVER-MINOR**) **stream**: add `isReadable` helper (Robert Nagy) #41199
- [9c718f8af0] - (**SEMVER-MINOR**) **stream**: add `map` method to `Readable` (Benjamin Gruenbaum) #40815
- [8cf507abf1] - **stream**: fix enqueue race condition on esm modules (Rafael Gonzaga) #40901
- [4522216660] - **stream**: add `isErrored` helper (Robert Nagy) #41121
- [2251bbae0d] - **stream**: remove whatwg streams experimental warning (James M Snell) #40971
- [3b1c01216c] - **stream**: drain `Transform` with 0 `highWaterMark` (Robert Nagy) #40947
- [436e07b36e] - **stream**: deprecate thenable support (Antoine du Hamel) #40860
- [9811617b18] - **stream**: fix the `ReadableStreamBYOBReader` error message (James M Snell) #40846
- [e110c96f48] - **stream**: pipeline with end option (Robert Nagy) #40886
- [c9f1398faf] - **stream**: pipeline should drain empty readable (Robert Nagy) #40654
- [55c9349afa] - **stream**: fix non readable `Duplex` `readableAborted` (Robert Nagy) #40801
- [1f722a1c77] - **stream**: allow calling callback before promise (Robert Nagy) #40772
- [1de552caeb] - **test**: add ignore for regex space rule (Danielle Adams) #41805
- [40c09600fd] - **test**: improve test coverage of dns/promises (Yoshiki Kuri-

- hara) #41425
- [fa425a1aa2] - **test**: remove broken wiki link from test/common doc (Yoshiki Kurihara) #41426
  - [9242c1900c] - **test**: do not OR F\_OK in fs.access() test (Colin Ihrig) #41484
  - [3bd8e92bbb] - **test**: mark test-performance-eventloopdelay flaky (Michael Dawson) #41409
  - [874000ff6b] - **test**: mark test-repl-sigint-nested-eval as flaky (Michael Dawson) #41302
  - [404c8f5501] - **test**: use spawnSync() full name in test-stdio-pipe-stderr (Rich Trott) #41332
  - [256bf9e6b6] - **test**: improve expectWarning error message (Rich Trott) #41326
  - [b1e4387c92] - **test**: use spawnSync() full name (Rich Trott) #41327
  - [8d15bacf2b] - **test**: add comments explaining \_\_setSimultaneousAccepts deprecation tests (Yoshiki Kurihara) #41307
  - [a53399edbb] - **test**: mark test-worker-take-heapsnapshot flaky (Michael Dawson) #41253
  - [e444b41093] - **test**: mark wpt/test-user-timing test flaky (Michael Dawson) #41203
  - [8926d956c1] - **test**: correct param name in JSDoc comment (Rich Trott) #41241
  - [2e133d5555] - **test**: mark test-crypto-keygen slow on windows (Michael Dawson) #41207
  - [28c52f60f6] - **test**: skip ESLint tests if no Intl (Rich Trott) #41105
  - [d6b15424da] - **test**: add missing JSDoc parameter name (Rich Trott) #41057
  - [3450227ba2] - **test**: deflake test-trace-atomics-wait (Luigi Pinca) #41018
  - [b9567d99fc] - **test**: add auth option case for url.format (Hirotaka Tagawa / wafuwafu13) #40516
  - [38fd30f34b] - **Revert** “**test**: skip different params test for OpenSSL 3.x” (Daniel Bevenius) #40640
  - [28a216a6dc] - **test**: mark test-fs-watch-non-recursive flaky on Windows (Luigi Pinca) #40916
  - [ab398b6c80] - **test**: deflake cluster-concurrent-disconnect (Luigi Pinca) #40877
  - [9e2e4437b9] - **test**: deflake fs-promises-watch (Luigi Pinca) #40863
  - [55678af57d] - **test**: fix argument order in assertion (Luigi Pinca) #40842
  - [4978689713] - **test**: deflake http2-pipe-named-pipe (Luigi Pinca) #40842
  - [f17789addf] - **test**: use descriptive name for destination file (Luigi Pinca) #40842
  - [48e2b60c44] - **test**: add AsyncLocalStorage tests using udp, tcp and tls sockets (Darshan Sen) #40741
  - [c002930a62] - **test**: add tests for invalid UTF-8 (git-srinivas) #40351
  - [25a166dd25] - **test**: fix flaky test-policy-integrity (Rich Trott) #40763
  - [25b3187021] - **test**: add semicolons for linter update (Rich Trott) #40720

- [b4fea14cc3] - **test**: disable warnings to fix flaky test (Antoine du Hamel) #40739
- [2c84c3eee8] - **test**: do not load absolute path crypto engines twice (Richard Lau) #41175
- [b5b3750678] - **timers**: use ref counts to count timers (Darshan Sen) #41231
- [c5f9e96ac4] - **(SEMVER-MINOR) timers**: add experimental scheduler api (James M Snell) #40909
- [00abb811ac] - **tls**: use optional chaining to simplify checks (Antoine du Hamel) #41337
- [ffca1a71ce] - **tls**: permit null as a pfx value (CallMeLaNN) #41170
- [3b5b893abb] - **tls**: improve handling of shutdown (Jameson Nash) #36111
- [99a90dbd4a] - **tools**: enable jsdoc/require-returns-type ESLint rule (Rich Trott) #41130
- [66feaf429c] - **tools**: fix small not-quite-a-bug in find-inactive-tsc.mjs (Rich Trott) #41469
- [7d5686dc9c] - **tools**: enable ESLint recommended configuration (Rich Trott) #41463
- [ecf3b6db44] - **tools**: enable ESLint no-constant-condition rule (Rich Trott) #41463
- [12ea18ded9] - **tools**: enable ESLint require-yield rule (Rich Trott) #41463
- [609a310e2a] - **tools**: enable ESLint no-sparse-arrays rule (Rich Trott) #41463
- [063abe52aa] - **tools**: enable ESLint no-loss-of-precision rule (Rich Trott) #41463
- [86ece9843f] - **tools**: replace for loop with map() (Rich Trott) #41451
- [70ea7462a6] - **tools**: use GITHUB\_ACTIONS env var in inactivity scripts (Rich Trott) #41422
- [62450d38a8] - **tools**: replace while+exec() with matchAll() (Rich Trott) #41406
- [2bc381ee55] - **tools**: fix argv bug in find-inactive-tsc.mjs (Rich Trott) #41394
- [3ecc964a29] - **tools**: remove conditional assignment in custom ESLint rule (Rich Trott) #41325
- [a136d56aa6] - **tools**: update lint-md-dependencies to @rollup/plugin-node-resolve@13.1.2 (Node.js GitHub Bot) #41369
- [003dd37717] - **tools**: update doc to rehype-raw@6.1.1 (Node.js GitHub Bot) #41367
- [e8f00fd2ff] - **tools**: remove last of error-masking in commit-queue.sh (Rich Trott) #41356
- [530c1275a0] - **tools**: update eslint to 8.6.0 (Node.js GitHub Bot) #41368
- [9f2365c4e1] - **tools**: do not mask errors on multiple commit retrieval (Rich Trott) #41340
- [f31a3a27bf] - **tools**: enable jsdoc/check-param-names lint rule (Rich Trott) #41311
- [1d2e676f8d] - **tools**: improve section tag additions in HTML doc genera-

- tor (Rich Trott) #41318
- [12c5333546] - **tools**: simplify commit-queue.sh merge command (Rich Trott) #41314
  - [85438e367e] - **tools**: update lint-md-dependencies to rollup@2.62.0 (Node.js GitHub Bot) #41315
  - [f890582760] - **tools**: use Object.hasOwn() in alljson.mjs (Rich Trott) #41306
  - [b6a0afc99e] - **tools**: avoid generating duplicate id attributes (Rich Trott) #41291
  - [7815fbd751] - **tools**: be intentional about masking possible error in start-ci.sh (Rich Trott) #41284
  - [4011be0d19] - **tools**: use {N} for spaces in regex (Rich Trott) #41295
  - [599c119de8] - **tools**: consolidate update-authors.js logic (Rich Trott) #41255
  - [0f728e0825] - **tools**: update doc dependency mdast-util-gfm-table to 1.0.2 (Rich Trott) #41260
  - [ae32af308a] - **tools**: make license-builder.sh comply with shellcheck 0.8.0 (Rich Trott) #41258
  - [d51e8ffb22] - **tools**: use arrow function for callback in lint-sh.js (Rich Trott) #41256
  - [1523aa5a02] - **tools**: add double-quotes to make-v8.sh (Rich Trott) #41257
  - [49dc1f278e] - **tools**: enable prefer-object-has-own lint rule (Rich Trott) #41245
  - [f926a490e5] - **tools**: update eslint to 8.5.0 (Node.js GitHub Bot) #41228
  - [91fc85ae1b] - **tools**: enable jsdoc/tag-lines ESLint rule (Rich Trott) #41147
  - [de2140d851] - **tools**: update lint-md-dependencies to @rollup/plugin-node-resolve@13.1.1 (Node.js GitHub Bot) #41227
  - [433274ac2c] - **tools**: fix CQ and auto-start-ci jobs (Antoine du Hamel) #41230
  - [95568dc877] - **tools**: fix GitHub Actions status when CQ is empty (Antoine du Hamel) #41193
  - [719c39d230] - **tools**: update doc to remark-rehype@10.1.0 (Node.js GitHub Bot) #41149
  - [0b2144028f] - **tools**: update lint-md-dependencies to rollup@2.61.1 vfile-reporter@7.0.3 (Node.js GitHub Bot) #41150
  - [3dc8483345] - **tools**: update ESLint to 8.4.1 (Rich Trott) #41114
  - [33be3e8451] - **tools**: enable JSDoc check-alignment lint rule (Rich Trott) #41109
  - [2c28f86eb9] - **tools**: strip comments from lint-md rollup output (Rich Trott) #41092
  - [1ff152120e] - **tools**: update highlight.js to 11.3.1 (Rich Trott) #41091
  - [2c009ccc24] - **tools**: enable jsdoc/require-returns-check lint rule (Rich Trott) #41089
  - [4aae04bb1a] - **tools**: update ESLint to 8.4.0 (Luigi Pinca) #41085

- [50420c654c] - **tools**: enable jsdoc/require-param-name lint rule (Rich Trott) #41057
- [0983f6b29b] - **tools**: use jsdoc recommended rules (Rich Trott) #41057
- [f9cf50f543] - **tools**: rollback highlight.js (Richard Lau) #41078
- [5bfa0ea9c4] - **tools**: remove Babel from license-builder.sh (Rich Trott) #41049
- [f74d8b56b8] - **tools**: update packages in tools/doc (Rich Trott) #41036
- [af9b05fc11] - **tools**: install and enable JSDoc linting in ESLint (Rich Trott) #41027
- [45e7affa9c] - **tools**: include JSDoc in ESLint updating tool (Rich Trott) #41027
- [9e770d4cfd] - **tools**: ignore unrelated workflow changes in slow Actions tests (Antoine du Hamel) #40990
- [e5cccd74] - **tools**: remove unneeded tool in update-eslint.sh (Rich Trott) #40995
- [017cdcd76a] - **tools**: consolidate ESLint dependencies (Rich Trott) #40995
- [83f946855f] - **tools**: update ESLint update script to consolidate dependencies (Rich Trott) #40995
- [0ed4775069] - **tools**: run ESLint update to minimize diff on subsequent update (Rich Trott) #40995
- [5527e9bfac] - **tools**: update gyp-next to v0.10.1 (Michaël Zasso) #40934
- [307dd76a90] - **tools**: fix commit-lint GH Actions CI (Antoine du Hamel) #40845
- [da35d4fc4b] - **tools**: ping TSC members identified as inactive (Rich Trott) #40915
- [2ffe08dc3e] - **tools**: update lint-md-dependencies to rollup@2.60.1 (Node.js GitHub Bot) #40929
- [5336e488f1] - **tools**: update lint-md dependencies (Rich Trott) #40894
- [96cfab14d0] - **tools**: update ESLint to 8.3.0 (Luigi Pinca) #40917
- [b54d53b9dd] - **tools**: add find-inactive-tsc (Rich Trott) #40884
- [4ffbff25f3] - **tools**: update @babel/eslint-parser to 7.16.3 (Node.js GitHub Bot) #40889
- [c5d0b3cf84] - **tools**: only validate first commit message of a PR (Antoine du Hamel) #40740
- [6b6fb83673] - **tools**: improve update scripts (Rich Trott) #40644
- [e915cec505] - **tools**: notify user if format-md needs to be run (Rich Trott) #40647
- [ea75ef5fbd] - **tools**: update babel-eslint-parser to 7.16.0 (Rich Trott) #40720
- [3580286818] - **tools**: avoid unnecessary escaping in markdown formatter (Rich Trott) #40645
- [362f5edf8c] - **tools,benchmark,lib,test**: enable no-case-declarations lint rule (Rich Trott) #41385
- [5d70195d56] - **tools,lib,test**: enable ESLint no-regex-spaces rule (Rich Trott) #41463



- [53570a8a7a] - **tools,test**: make -J behavior default for test.py (Rich Trott) #40945
- [5380de725c] - **typings**: add types for symbol and accessor properties on **primordials** (ExE Boss) #40992
- [782dbbd38c] - **typings**: add JSDoc for **string\_decoder** (Qingyu Deng) #38229
- [08c2512bbf] - **url**: detect hostname more reliably in url.parse() (Rich Trott) #41031
- [2c7f17c72c] - **util**: do not reduce to a single line if not appropriate using inspect (Ruben Bridgewater) #41083
- [7b6c71ab1c] - **util**: display a present-but-undefined error cause (Jordan Harband) #41247
- [2602c0ca62] - **util**: serialize falsy cause values while inspecting errors (Ruben Bridgewater) #41097
- [89d955658b] - **util**: make sure error causes of any type may be inspected (Ruben Bridgewater) #41097
- [8ce85882bd] - **(SEMVER-MINOR) util**: pass through the inspect function to custom inspect functions (Ruben Bridgewater) #41019
- [4f300a5b00] - **util**: escape lone surrogate code points using .inspect() (Ruben Bridgewater) #41001
- [45a3e2454d] - **(SEMVER-MINOR) util**: add numericSeparator to util.inspect (Ruben Bridgewater) #41003
- [b15f5e48fa] - **(SEMVER-MINOR) util**: always visualize cause property in errors during inspection (Ruben Bridgewater) #41002
- [e29bd4699d] - **(SEMVER-MINOR) v8**: multi-tenant promise hook api (Stephen Belanger) #39283

## 2022-01-10, Version 16.13.2 ‘Gallium’ (LTS), @daniel-leadams

This is a security release.

### Notable changes

**Improper handling of URI Subject Alternative Names (Medium)(CVE-2021-44531)** Accepting arbitrary Subject Alternative Name (SAN) types, unless a PKI is specifically defined to use a particular SAN type, can result in bypassing name-constrained intermediates. Node.js was accepting URI SAN types, which PKIs are often not defined to use. Additionally, when a protocol allows URI SANs, Node.js did not match the URI correctly.

Versions of Node.js with the fix for this disable the URI SAN type when checking a certificate against a hostname. This behavior can be reverted through the **--security-revert** command-line option.

More details will be available at CVE-2021-44531 after publication.

**Certificate Verification Bypass via String Injection (Medium)(CVE-2021-44532)** Node.js converts SANs (Subject Alternative Names) to a string format. It uses this string to check peer certificates against hostnames when validating connections. The string format was subject to an injection vulnerability when name constraints were used within a certificate chain, allowing the bypass of these name constraints.

Versions of Node.js with the fix for this escape SANs containing the problematic characters in order to prevent the injection. This behavior can be reverted through the `--security-revert` command-line option.

More details will be available at CVE-2021-44532 after publication.

**Incorrect handling of certificate subject and issuer fields (Medium)(CVE-2021-44533)** Node.js did not handle multi-value Relative Distinguished Names correctly. Attackers could craft certificate subjects containing a single-value Relative Distinguished Name that would be interpreted as a multi-value Relative Distinguished Name, for example, in order to inject a Common Name that would allow bypassing the certificate subject verification.

Affected versions of Node.js do not accept multi-value Relative Distinguished Names and are thus not vulnerable to such attacks themselves. However, third-party code that uses node's ambiguous presentation of certificate subjects may be vulnerable.

More details will be available at CVE-2021-44533 after publication.

**Prototype pollution via console.table properties (Low)(CVE-2022-21824)** Due to the formatting logic of the `console.table()` function it was not safe to allow user controlled input to be passed to the `properties` parameter while simultaneously passing a plain object with at least one property as the first parameter, which could be `__proto__`. The prototype pollution has very limited control, in that it only allows an empty string to be assigned numerical keys of the object prototype.

Versions of Node.js with the fix for this use a null prototype for the object these properties are being assigned to.

More details will be available at CVE-2022-21824 after publication.

Thanks to Patrik Oldsberg (rugvip) for reporting this vulnerability.

## Commits

- [8dd4ca4537] - **console**: fix prototype pollution via console.table (Tobias Nießen) nodejs-private/node-private#307
- [e52882da4c] - **crypto,tls**: implement safe x509 GeneralName format (Tobias Nießen) nodejs-private/node-private#300

- [9a0a189b0b] - **src**: add cve reverts and associated tests (Michael Dawson) nodejs-private/node-private#300
- [4a262d42bc] - **src**: remove unused x509 functions (Tobias Nießen) nodejs-private/node-private#300
- [965536fe3d] - **tls**: fix handling of x509 subject and issuer (Tobias Nießen) nodejs-private/node-private#300
- [a2cbfa95ff] - **tls**: drop support for URI alternative names (Tobias Nießen) nodejs-private/node-private#300

## 2021-12-01, Version 16.13.1 ‘Gallium’ (LTS), @BethGriggs

### Notable Changes

- [c14eb2325d] - **deps**: upgrade npm to 8.1.2 (npm team) #40643
- [a901b6c53c] - **deps**: update c-ares to 1.18.1 (Richard Lau) #40660
  - This release contains a c-ares update to fix a regression introduced in Node.js v16.6.2 resolving CNAME records containing underscores (#39780).
- [755c08573f] - **doc**: add VoltrexMaster to collaborators (voltrexmaster) #40566
- [881dd7ba2a] - **lib**: fix regular expression to detect ‘/’ and ‘\’ (Francesco Trotta) #40325

### Commits

- [996bc6e840] - **benchmark**: increase crypto DSA keygen params (Brian White) #40416
- [27009092c8] - **build**: skip long-running Actions for README-only modifications (Rich Trott) #40571
- [4581997ed0] - **build**: disable v8 pointer compression on 32bit archs (Cheng Zhao) #40418
- [17433060d4] - **build**: fix actions pull request’s branch (Mestery) #40494
- [bfdd32fa62] - **build**: avoid run find inactive authors on forked repo (Jiawen Geng) #40465
- [134e8afc59] - **build**: update codeowners-validator to 0.6 (FrankQiu) #40307
- [de125a556c] - **crypto**: avoid double free (Michael Dawson) #40380
- [c14eb2325d] - **deps**: upgrade npm to 8.1.2 (npm team) #40643
- [a901b6c53c] - **deps**: update c-ares to 1.18.1 (Richard Lau) #40660
- [76e2c3769e] - **deps**: upgrade npm to 8.1.1 (npm team) #40554
- [91c3cf5d0a] - **deps**: V8: cherry-pick 422dc378a1da (Ray Wang) #40450
- [769336ab8c] - **deps**: add riscv64 config into openssl gypi (Lu Yahan) #40473
- [76d1b5d868] - **deps**: patch V8 to 9.4.146.24 (Michaël Zasso) #40616
- [23d11a1dd9] - **dgram**: fix send with out of bounds offset + length (Nitzan Uziely) #40568

- [45bdc77dc0] - **doc**: update cjs-module-lexer repo link (Guy Bedford) #40707
- [de5c5c8509] - **doc**: remove `--experimental-modules` documentation (FrankQiu) #38974
- [befac5ddd9] - **doc**: update tracking issues of startup performance (Joyee Cheung) #40629
- [3cb74d72f8] - **doc**: fix markdown syntax and HTML tag misses (ryan) #40608
- [eea061f8f1] - **doc**: use ‘GitHub Actions workflow’ instead (Mestery) #40586
- [7a6e833677] - **doc**: add node: url scheme (Daniel Nalborczyk) #40573
- [d72fb7df4a] - **doc**: call cwd function (Daniel Nalborczyk) #40573
- [d732ff4614] - **doc**: remove unused imports (Daniel Nalborczyk) #40573
- [e2114e21f4] - **doc**: add info on project’s usage of coverity (Michael Dawson) #40506
- [d38077babe] - **doc**: fix typo in changelogs (Luigi Pinca) #40585
- [7c7f8791c6] - **doc**: update onboarding task (Rich Trott) #40570
- [0a7c4ff248] - **doc**: simplify ccache instructions (Rich Trott) #40550
- [5593dd1b25] - **doc**: fix macOS environment variables for ccache (Rich Trott) #40550
- [2d4a042675] - **doc**: improve `async_context` introduction (Michaël Zasso) #40560
- [9fcfef09ac] - **doc**: use GFM footnotes in webcrypto.md (Rich Trott) #40477
- [579f01c0a3] - **doc**: describe buffer limit of `v8.serialize` (Ray Wang) #40243
- [3b6cf090a0] - **doc**: use GFM footnotes in maintaining-V8.md (#40476) (Rich Trott) #40476
- [dea701004e] - **doc**: fix `fs.symlink` code example (Juan José Arboleda) #40414
- [595117ff0b] - **doc**: explain backport labels (Stephen Belanger) #40520
- [042f01e3ed] - **doc**: fix entry for Slack channel in onboarding.md (Rich Trott) #40563
- [755c08573f] - **doc**: add VoltrexMaster to collaborators (voltrexmaster) #40566
- [c029d0b61f] - **doc**: document considerations for inclusion in core (Rich Trott) #40338
- [836fc274e4] - **Revert** “**doc**: fix typo in stream docs” (Luigi Pinca) #40819
- [b3a12767a4] - **doc**: update link in onboarding doc (Rich Trott) #40539
- [aa47c9f38f] - **doc**: clarify behavior of `napi_extended_error_info` (Michael Dawson) #40458
- [bf88328bdc] - **doc**: add updating expected assets to release guide (Richard Lau) #40470
- [621266afc7] - **doc**: format `doc/api/*.md` with markdown formatter (Rich Trott) #40403

- [7b746381ce] - **doc**: specify that maxFreeSockets is per host (Luigi Pinca) #40483
- [934dcc85c3] - **doc**: update Collaborator guide to reflect GitHub web UI update (Antoine du Hamel) #40456
- [4724e07476] - **doc**: indicate n-api out params that may be NULL (Isaac Brodsky) #40371
- [3b1499c971] - **doc**: update CHANGELOG.md for Node.js 16.13.0 (Richard Lau) #40617
- [881dd7ba2a] - **lib**: fix regular expression to detect ‘/’ and ‘\’ (Francesco Trotta) #40325
- [0a8c33123e] - **lib,url**: correct URL’s argument to pass idlharness (Khaidi Chu) #39848
- [480f0e1d20] - **meta**: use form schema for flaky test template (Michaël Zasso) #40737
- [55ff97342d] - **meta**: update AUTHORS (Node.js GitHub Bot) #40668
- [ef46cb428d] - **meta**: consolidate AUTHORS entries for brettkiefer (Rich Trott) #40599
- [7230b6d33d] - **meta**: consolidate AUTHORS entries for alexzherdev (Rich Trott) #40620
- [9e12ed4f68] - **meta**: consolidate AUTHORS entries for Azard (Rich Trott) #40619
- [97aa8e42b8] - **meta**: move Fishrock123 to emeritus (Jeremiah Senkpiel) #40596
- [7b1c89f357] - **meta**: consolidate AUTHORS entries for clakech (Rich Trott) #40589
- [0003cb6b3b] - **meta**: consolidate AUTHORS entries for darai0512 (Rich Trott) #40569
- [7590bacec1] - **meta**: update AUTHORS (Node.js GitHub Bot) #40580
- [a5475df083] - **meta**: consolidate AUTHORS entries for dfabulich (Rich Trott) #40527
- [c021a7f169] - **meta**: move one or more collaborators to emeritus (Node.js GitHub Bot) #40464
- [d64cf1706c] - **meta**: add Richard Lau to TSC list in README.md (Rich Trott) #40523
- [d09b8239bf] - **meta**: consolidate AUTHORS entries for dguo (Rich Trott) #40517
- [66192060e7] - **meta**: consolidate AUTHORS entries for cxreg (Rich Trott) #40490
- [b4f51276cb] - **meta**: update AUTHORS (Node.js GitHub Bot) #40485
- [2a2b549a28] - **meta**: consolidate AUTHORS entries for emanuelbuholzer (Rich Trott) #40469
- [618bbbf2f4] - **meta**: consolidate AUTHORS entries for ebickle (Rich Trott) #40447
- [06706e8dd2] - **meta**: add typings to label-pr-config (Mestery) #40401
- [e2c9e1ccdd] - **meta**: consolidate AUTHORS entries for evantorrie (Rich Trott) #40430

- [dab574e937] - **policy**: fix message for invalid manifest specifier (Rich Trott) #40574
- [58de6cebb6] - **process**: refactor execution (Voltrex) #40664
- [bc0eb0a3ea] - **src**: make LoadEnvironment with string work with builtin modules path (Michaël Zasso) #40607
- [2c8a6ec28e] - **src**: remove usage of `AllocatedBuffer` from `node_http2` (Darshan Sen) #40584
- [59c26a2b2c] - **src**: fix `#endif` description in `crypto_keygen.h` (Tobias Nießen) #40639
- [789fef1309] - **src**: throw error instead of assertion (Ray Wang) #40243
- [7a8a6deee7] - **src**: register external references in os bindings (Joyee Cheung) #40239
- [7bb3d43432] - **src**: register external references in crypto bindings (Joyee Cheung) #40239
- [143c881ccb] - **src**: add missing initialization in `agent.h` (Michael Dawson) #40379
- [c15afda79f] - **src**: get embedder options on-demand (Joyee Cheung) #40357
- [ff3b7d228e] - **src**: ensure V8 initialized before marking milestone (Shelley Vohr) #40405
- [774bc46327] - **src,crypto**: remove `AllocatedBuffer` from `crypto_cipher.cc` (Darshan Sen) #40400
- [4030eff3d6] - **src,fs**: remove `ToLocalChecked()` call from `fs::AfterMkdirp()` (Darshan Sen) #40386
- [3ac99a2417] - **src,stream**: remove `*Check*()` calls from non-`Initialize()` functions (Darshan Sen) #40425
- [36d3b123a0] - **stream**: support array of streams in promises pipeline (Mestery) #40193
- [01ffe0316c] - **test**: deflake child-process-pipe-dataflow (Luigi Pinca) #40838
- [63b44fc429] - **test**: skip macos sandbox test with builtin modules path (Michaël Zasso) #40607
- [3d50997ccb] - **test**: add semicolon after chunk size (Luigi Pinca) #40487
- [f114e35115] - **test**: deflake http2-cancel-while-client-reading (Luigi Pinca) #40659
- [f778fa230b] - **test**: test `crypto.setEngine()` using an actual engine (Darshan Sen) #40481
- [b9533c592a] - **test**: use conventional argument order in assertion (Tobias Nießen) #40591
- [e72c95c580] - **test**: fix test description (Luigi Pinca) #40486
- [af4e682758] - **test**: pass URL's to `ascii.window.js` WPT (Khaidi Chu) #39910
- [6de88bc5ed] - **test**: adjust CLI flags test to ignore blank lines in doc (Rich Trott) #40403
- [8226690097] - **test**: mark test-policy-integrity flaky on Windows (Rich Trott) #40684

- [50c6666b37] - **test**: fix test-datetime-change-notify after daylight change (Piotr Rybak) #40684
- [9227f2af79] - **test**: split test-crypto-dh.js (Joyee Cheung) #40451
- [c593cff0af] - **test,doc**: correct documentation for runBenchmark() (Rich Trott) #40683
- [aef809f5c8] - **test,tools**: increase pummel/benchmark test timeout from 4x to 6x (Rich Trott) #40684
- [908f6447cd] - **test,tools**: increase timeout for benchmark tests (Rich Trott) #40684
- [64c6575f44] - **tools**: simplify and fix commit queue (Michaël Zasso) #40742
- [cba8eaf264] - **tools**: ensure the PR was not pushed before merging (Antoine du Hamel) #40747
- [1c8590e1fe] - **tools**: update ESLint to 8.2.0 (Luigi Pinca) #40734
- [18800dee0a] - **tools**: use GitHub Squash and Merge feature when using CQ (Antoine du Hamel) #40666
- [48a785edb7] - **tools**: fix bug in prefer-primordials ESLint rule (Antoine du Hamel) #40628
- [adde2a7a8c] - **tools**: add script to update c-ares (Richard Lau) #40660
- [c12ce898e8] - **tools**: abort CQ session when landing several commits (Antoine du Hamel) #40577
- [dd08e532a2] - **tools**: fix commit-lint workflow (Antoine du Hamel) #40673
- [b4a80dba79] - **tools**: avoid fetch extra commits when validating commit messages (Antoine du Hamel) #39128
- [2a53995442] - **tools**: update ESLint to 8.1.0 (Luigi Pinca) #40582
- [8648e50183] - **tools**: fix formatting of warning message in update-authors.js (Rich Trott) #40600
- [59de0f703f] - **tools**: update doc tools to accommodate GFM footnotes (Rich Trott) #40477
- [abf3b84d77] - **tools**: add support for import assertions in linter (Antoine du Hamel) #39924
- [04c2cbecb9] - **tools**: update tools/lint-md dependencies to support GFM footnotes (Rich Trott) #40445
- [a9990876f7] - **tools**: update lint-md dependencies (Rich Trott) #40404
- [f45814bad1] - **tools,meta**: remove exclusions from AUTHORS (Rich Trott) #40648
- [7d550ad966] - **tty**: support more CI services in getColorDepth (Richie Bendall) #40385
- [cdea5b671b] - **typings**: add more bindings typings (Mestery) #40415
- [67c7d11f1a] - **typings**: add JSDoc typings for inspector (Voltrex) #38390
- [fbe0323ebf] - **typings**: improve internal bindings typings (Mestery) #40411
- [63ab0031c3] - **typings**: separate internalBinding typings (Mestery) #40409

## 2021-10-26, Version 16.13.0 ‘Gallium’ (LTS), @richardlau

### Notable Changes

This release marks the transition of Node.js 16.x into Long Term Support (LTS) with the codename ‘Gallium’. The 16.x release line now moves into “Active LTS” and will remain so until October 2022. After that time, it will move into “Maintenance” until end of life in April 2024.

## 2021-10-20, Version 16.12.0 (Current), @richardlau

### Notable Changes

**Experimental ESM Loader Hooks API** Node.js ESM Loader hooks have been consolidated to represent the steps involved needed to facilitate future loader chaining:

1. **resolve**: `resolve [+ getFormat]`
2. **load**: `getFormat + getSource + transformSource`

For consistency, `getGlobalPreloadCode` has been renamed to `globalPreload`.

A loader exporting obsolete hook(s) will trigger a single deprecation warning (per loader) listing the errant hooks.

Contributed by Jacob Smith, Geoffrey Booth, and Bradley Farias - <https://github.com/nodejs/node/pull/37468>

### Other Notable Changes

- [8fdabcb918] - **deps**: upgrade npm to 8.1.0 (npm team) #40463
- [d1d9f2de30] - **doc**: deprecate (doc-only) http abort related (dr-js) #36670
- [4116b6c907] - **(SEMVER-MINOR) vm**: add support for import assertions in dynamic imports (Antoine du Hamel) #40249

### Commits

- [8bb3951e41] - **build**: remove duplicate check for authors.yml (Rich Trott) #40393
- [2de57edced] - **build**: make scripts in gyp run with right python (Cheng Zhao) #39730
- [a8926d199d] - **crypto**: remove incorrect constructor invocation (gc) #40300
- [8fdabcb918] - **deps**: upgrade npm to 8.1.0 (npm team) #40463
- [dca5ac1539] - **deps**: suppress zlib compiler warnings (Daniel Bevenius) #40343
- [91c3bf6a7f] - **deps**: upgrade Corepack to 0.10 (Maël Nison) #40374
- [7e02124a06] - **dgram**: add `nread` assertion to `UDPWrap::OnRecv` (Darshan Sen) #40295
- [2d409ed29e] - **dns**: refactor and use validators (Voltrex) #40022



- [dc7291dab8] - **doc**: remove ESLint comments which were breaking the CJS/ESM toggles (Mark Skelton) #40408
- [85b7385115] - **doc**: add pronouns for tniessen to README (Tobias Nießen) #40412
- [1d5857c9f4] - **doc**: format changelogs (Rich Trott) #40388
- [5eb9402b50] - **doc**: fix missing variable in deepStrictEqual example (OliverOdo) #40396
- [6f77d1a1d5] - **doc**: fix asyncLocalStorage.run() description (Constantine Kim) #40381
- [93a48e02dc] - **doc**: fix typos in n-api docs (Ignacio Carbajo) #40402
- [fb7afb91c2] - **doc**: format doc/guides using format-md task (Rich Trott) #40358
- [6c091c7878] - **doc**: improve phrasing in fs.md (Arslan Ali) #40255
- [38d81380ac] - **doc**: add link to core promises tracking issue (Michael Dawson) #40355
- [71a94aa82a] - **doc**: correct ESM load hook table header (Jacob Smith) #40234
- [5b074affb4] - **doc**: fix typo in esm.md (Mason Malone) #40273
- [3b3aaa0a37] - **doc**: fix typo in ESM example (Tobias Nießen) #40275
- [f848553fb8] - **doc**: assign missing deprecation number (Michaël Zasso) #40324
- [d1d9f2de30] - **doc**: deprecate (doc-only) http abort related (dr-js) #36670
- [1ef2cf8413] - **doc**: anchor link parity between markdown and html-generated docs (foxxyz) #39304
- [3743406b0a] - **(SEMVER-MINOR) esm**: consolidate ESM loader hooks (Jacob Smith) #37468
- [168020e1c8] - **lib**: refactor to use let (gdccwxx) #40364
- [bcd59d70bb] - **meta**: consolidate AUTHORS entries for gabrielschulhof (Rich Trott) #40420
- [80b4245db8] - **meta**: consolidate AUTHORS information for geirha (Rich Trott) #40406
- [93cecb4700] - **meta**: consolidate duplicate AUTHORS entries for has-saarp (Rich Trott) #40391
- [fff3135909] - **meta**: update AUTHORS (Node.js GitHub Bot) #40392
- [122481713d] - **meta**: consolidate AUTHORS entry for thw0rted (Rich Trott) #40387
- [7f50313fcc] - **meta**: update label-pr-config (Mestery) #40199
- [5668182665] - **meta**: use .mailmap to consolidate AUTHORS entries for ide (Rich Trott) #40367
- [bc86084a3e] - **net**: check if option is undefined (Daijiro Wachi) #40344
- [4564a93e5e] - **net**: remove unused ObjectKeys (Daijiro Wachi) #40344
- [dbb2e6f429] - **net**: check objectMode first and then readable || writable (Daijiro Wachi) #40344
- [a672be57c8] - **net**: throw error to object mode in Socket (Daijiro Wachi) #40344
- [faf9e28c36] - **src**: remove usage of `AllocatedBuffer` from `stream_*`

- (Darshan Sen) #40293
- [857af2ba99] - **src**: add missing initialization (Michael Dawson) #40370
- [2bfa87edbc] - **stream**: fix fromAsyncGen (Robert Nagy) #40499
- [1e15137e71] - **test**: replace common port with specific number (Daijiro Wachi) #40344
- [6f6b99c302] - **test**: fix typos in whatwg-webstreams explanations (Tobias Nießen) #40389
- [641b1bb052] - **test**: add test for readStream.path when fd is specified (Qingyu Deng) #40359
- [07dae7ff50] - **test**: replace .then chains with await (gdccwxx) #40348
- [d8a36ee1de] - **test**: fix “test/common/debugger” identify async function (gdccwxx) #40348
- [13d6a56c7d] - **test**: improve test coverage of fs.ReadStream with FileHandle (Antoine du Hamel) #40018
- [50f91ab059] - **tools**: update @babel/eslint-parser (Rich Trott) #40394
- [3611073145] - **tools**: remove @babel/plugin-syntax-import-assertions (Rich Trott) #40394
- [b72d693a3a] - **tools**: remove @babel/plugin-syntax-class-properties (Rich Trott) #40394
- [d6a99b77da] - **tools**: remove @babel/plugin-syntax-top-level-await (Rich Trott) #40394
- [d9157aa5fe] - **tools**: update ESLint to 8.0.0 (Rich Trott) #40394
- [43b97c7984] - **tools**: prepare ESLint rules for 8.0.0 requirements (Rich Trott) #40394
- [282b6eb4b0] - **tools**: fix ESLint update scripts (Rich Trott) #40394
- [c3a744f7bf] - **tools**: warn about duplicates when generating AUTHORS file (Rich Trott) #40304
- [7733b5e55d] - **typings**: define types for os binding (Michaël Zasso) #40222
- [ca9a854877] - **typings**: add missing types to options and util bindings (Michaël Zasso) #40222
- [c3a7a0bd59] - **typings**: define types for timers binding (Michaël Zasso) #40222
- [65b51d05fa] - **typings**: fix declaration of primordials (Michaël Zasso) #40222
- [5f3f3a5128] - **v8**: remove -harmony-top-level-await (Geoffrey Booth) #40226
- [4116b6c907] - **(SEMVER-MINOR) vm**: add support for import assertions in dynamic imports (Antoine du Hamel) #40249

**2021-10-12, Version 16.11.1 (Current), @danielleadams**

This is a security release.

## Notable changes

- **CVE-2021-22959**: HTTP Request Smuggling due to spaced in headers (Medium)
  - The http parser accepts requests with a space (SP) right after the header name before the colon. This can lead to HTTP Request Smuggling (HRS). More details will be available at CVE-2021-22959 after publication.
- **CVE-2021-22960**: HTTP Request Smuggling when parsing the body (Medium)
  - The http parser ignores chunk extensions when parsing the body of chunked requests. This leads to HTTP Request Smuggling (HRS) under certain conditions. More details will be available at CVE-2021-22960 after publication.

## Commits

- [af488f8dc8] - **deps**: update llhttp to 6.0.4 (Matteo Collina) nodejs-private/node-private#284
- [2d1eefad98] - **http**: add regression test for smuggling content length (Matteo Collina) nodejs-private/node-private#284
- [45d419ab1c] - **http**: add regression test for chunked smuggling (Matteo Collina) nodejs-private/node-private#284

## 2021-10-08, Version 16.11.0 (Current), @danielleadams

### Notable Changes

- **crypto**
  - update root certificates (Richard Lau) #40280
- **deps**
  - upgrade npm to 8.0.0 (npm team) #40369
  - update nghttp2 to v1.45.1 (thunder-coding) #40206
  - update V8 to 9.4.146.19 (Michaël Zasso) #40285
- **tools**
  - update certdata.txt (Richard Lau) #40280

### Commits

- [34f3021ca3] - **benchmark**: add util.toUSVString()'s benchmark (Khaidi Chu) #40203
- [f83b9bcb6f] - **build**: support Python 3.10.0 (FrankQiu) #40296
- [3148f9b64e] - **build**: check for duplicates in new AUTHORS entries (Rich Trott) #40264
- [48c162d457] - **build**: set DESTCPU correctly for 'make binary' on Apple Silicon (Chris Heisterkamp) #40147

- [7fbfb66d41] - **build**: limit update authors CI scope (Jiawen Geng) #40219
- [a1bee94502] - **build**: pass a tuple of alternatives to str.endswith() (Christian Clauss) #40017
- [eaf9d08332] - **build**: add --no-user for pip commands in Makefile (Rich Trott) #40169
- [e22ca06ac4] - **build**: fix "test-internet.yml" workflows (SURYAPRATAP SINGH SURYAVANSHI) #40177
- [4da73d09bf] - **(SEMVER-MINOR) build**: reset embedder string to "-node.0" (Michaël Zasso) #40285
- [4b117fbc81] - **console**: use validators for consistency (Voltrex) #39812
- [6489423187] - **console**: avoid unnecessary variables (Pancake) #40183
- [9af2592e69] - **crypto**: update root certificates (Richard Lau) #40280
- [2fa5e5011f] - **crypto**: handle initEDRaw pkey failure (Shelley Vohr) #40188
- [7968c79301] - **crypto**: don't call callback twice in case crypto.randomBytes fails (Guilherme Bernal) #40157
- [b89c7ae297] - **deps**: upgrade npm to 8.0.0 (npm team) #40369
- [947f3dc9af] - **deps**: V8: patch jinja2 for Python 3.10 compat (Michaël Zasso) #40296
- [685c7d43a5] - **(SEMVER-MINOR) deps**: update nghttp2 to v1.45.1 (thunder-coding) #40206
- [e7046e0ff1] - **deps**: restore minimum ICU version to 68 (Michaël Zasso) #39470
- [a3db2033d4] - **(SEMVER-MINOR) deps**: make V8 9.4 abi-compatible with 9.0 (Michaël Zasso) #40285
- [5cc24e6d76] - **deps**: V8: cherry-pick 9a607043cb31 (Jiawen Geng) #40046
- [8de5eb88d3] - **deps**: V8: cherry-pick 5681a6565828 (Michaël Zasso) #39945
- [150d816edb] - **deps**: V8: cherry-pick bdcda72cd1d8 (Michaël Zasso) #39945
- [807b68b430] - **deps**: V8: cherry-pick 00bb1a77c03e (Darshan Sen) #39829
- [be016948df] - **deps**: silence irrelevant V8 warning (Michaël Zasso) #38990
- [22dcd3e4dc] - **deps**: silence irrelevant V8 warnings (Michaël Zasso) #37587
- [1aea6a771b] - **deps**: fix V8 build issue with inline methods (Jiawen Geng) #40060
- [e9812157f0] - **deps**: make v8.h compatible with VS2015 (Joao Reis) #32116
- [88ae710057] - **deps**: V8: forward declaration of Rtl\*FunctionTable (Refael Ackermann) #32116
- [e810f0766f] - **deps**: V8: patch register-arm64.h (Refael Ackermann) #32116
- [b8aabd5622] - **deps**: V8: un-cherry-pick bd019bd (Refael Ackermann) #32116

- [309c4f05df] - **(SEMVER-MINOR) deps:** update V8 to 9.4.146.19 (Michaël Zasso) #40285
- [69eaaf6321] - **doc:** format general markdown files (Rich Trott) #40322
- [dc9c31985c] - **doc:** fix the inline code-block at the NodeDhKeyGenParams class (Justin) #40341
- [8d0546db39] - **doc:** correct the codeblock for `hmacImportParams.hash` (Justin) #40340
- [1db2ffd008] - **doc:** fix typo in stream docs (Juan José Arboleda) #40337
- [abfcbcd14c] - **doc:** update fast-track approval comment request (voltrex-master) #40316
- [e2cd2f44f2] - **doc:** fix CVE-2021-22940 references (Michaël Zasso) #40308
- [88bdbf1e29] - **doc:** format markdown files in test directory (Rich Trott) #40290
- [f71ac57a86] - **doc:** add triagers to the table of contents (FrankQiu) #39969
- [a5218b5313] - **doc:** update Forrest Norvell's pronouns (Forrest L Norvell) #40292
- [d2e54e5d0c] - **doc:** reorder stream 'readable' paragraphs (Vincent Weevers) #40212
- [1d0a3e1a0c] - **doc:** fix typo in fs (Brian White) #40257
- [66edb7bfe1] - **doc:** fix typo in fs.md (Arslan Ali) #40254
- [614a7c21f8] - **doc:** fix typo in packages.md (Arslan Ali) #40230
- [9fa6dfbe76] - **doc:** fix example of `crypto.generateKeySync` (Gary Ho) #40225
- [9a2b94a142] - **doc:** update fs.watchFile doc (Clément Nardi) #40134
- [a68f91c884] - **doc:** add version when diagnostics\_channel APIs were added (Gerhard Stöbich) #40208
- [6bf67909ad] - **doc:** fix typo in 'maxHeaderSize' (Rebhi Alfa) #40164
- [73a127ba7b] - **doc:** fix buffer api example code's token error (m3m0ry) #40125
- [59db8293f4] - **doc:** fix typo in `async_hooks.md` (xuchaobei) #40187
- [779dfd199b] - **doc:** make version picker usable on mobile (Evan Lucas) #39958
- [7bd62f4809] - **doc:** fix typos in http.md (Luigi Pinca) #40161
- [94b415b980] - **doc:** add blank line between comments (Rich Trott) #40160
- [847b451d88] - **doc:** update markdown files in src for upcoming linting/formatting (Rich Trott) #40159
- [cea7395858] - **doc:** update benchmarks README.md for upcoming linting/formatting (Rich Trott) #40158
- [c231745837] - **doc:** prepare markdown file for upcoming formatting/linting (Rich Trott) #40156
- [7e58cda6e0] - **doc:** update tools .md files for upcoming lint/formatting (Rich Trott) #40155
- [02a87b096c] - **doc:** update markdown formatting for \*.md files (Rich Trott) #40154

- [9b0e61a67f] - **doc,src**: update crypto/README.md (Tobias Nießen) #40332
- [88e7bd073a] - **events**: allow dispatch many times without listener (MrB-Bot) #39772
- [c7f3294d02] - **(SEMVER-MINOR) fs**: add stream utilities to `FileHandle` (Antoine du Hamel) #40009
- [555af5b808] - **http**: remove ‘data’ and ‘end’ listener if client parser error (Matteo Collina) #40244
- [22725f5bdd] - **http**: use 0 as default for requests limit (Artur K) #40192
- [3d5eba8042] - **lib**: refactor to avoid unsafe array iteration (Antoine du Hamel) #40271
- [547fc86371] - **lib**: use `validateArray` (Voltrex) #39774
- [a37527ce8f] - **meta**: add mailmap entry for ratracegrad (Rich Trott) #40291
- [a75a8f2ca0] - **meta**: update AUTHORS (Node.js GitHub Bot) #40289
- [66ab278bae] - **meta**: add .mailmap entry for Jimbly (Rich Trott) #40267
- [e040f2cf0d] - **meta**: add .mailmap entry for daguej (Rich Trott) #40223
- [d64740fbb3] - **meta**: update AUTHORS (Node.js GitHub Bot) #40217
- [9ee9e41f5c] - **meta**: move one or more collaborators to emeritus (Node.js GitHub Bot) #40115
- [da6c82b425] - **meta**: update gdams contact information (Rich Trott) #40233
- [a660017915] - **meta**: add .mailmap entry for kunalspathak (Rich Trott) #40202
- [4d46bde22e] - **meta**: add mailmap entry for ralphtheninja (Rich Trott) #40153
- [b856886d00] - **meta**: update mailmap for LakshmiSwethaG (Rich Trott) #40172
- [972d921855] - **module**: fix `ERR_REQUIRE_ESM` for `parentPath` null (Guy Bedford) #40145
- [344c03b2e6] - **repl**: skip `EmptyStatements` and return result with `TLA` (Mestery) #40194
- [b694b0ca52] - **src**: use `As()` instead of `Cast()` for conversions (Darshan Sen) #40287
- [383dbe940d] - **src**: implement changes suggested by @addaleax (kokke) #40128
- [a6112dd1de] - **src**: fix time-of-use vs time-of-check “bugs” (kokke) #40128
- [bbf1ed7c78] - **src**: remove `AllocatedBuffer` from `crypto_common.cc` (Darshan Sen) #40213
- [528f9228fd] - **src**: remove usage of `AllocatedBuffer` from `udp_wrap.cc` (Darshan Sen) #40151
- [d36127d862] - **src**: move `ToUSVString()` to `node_util.cc` (Khaidi Chu) #40204
- [bddf8c28d9] - **src,crypto**: eliminate code duplication between `StatelessDiffieHellman*` (Darshan Sen) #40084
- [6a8689f1f9] - **test**: fix typo in `test/common/index.js` (Tobias Nießen)

- #40297
- [dc0c2744cf] - **test**: suppress compiler warning in test\_bigint (Daniel Bevenius) #40253
- [18820bfa58] - **tools**: patch jinja2 for Python 3.10 compat (Michaël Zasso) #40296
- [8d7710e6c3] - **tools**: update rollup entry in lint-md package.json (FrankQiu) #40281
- [7bb4dc2406] - **tools**: update certdata.txt (Richard Lau) #40280
- [f31b0c9700] - **tools**: update remark-preset-lint-node to 3.2.0 (Rich Trott) #40278
- [9c4e7a5158] - **tools**: fix lint-md autolinking (Rich Trott) #40181
- [26db6db87f] - **tools**: implement markdown formatting (Rich Trott) #40181
- [67812e8c65] - **tools**: re-implement lint-md without unified-args (Rich Trott) #40180
- [0232f94175] - **tools**: update remark-preset-lint-node to 3.1.0 (Rich Trott) #40166
- [80fdedd184] - **tools**: fix find-inactive-collaborators for recent README change (Rich Trott) #40163
- [ebf17102d1] - **tools**: extend default yamllint config (Michaël Zasso) #40150
- [f7c82749a7] - **tools**: update V8 gypfiles for 9.4 (Michaël Zasso) #39945
- [dd39422b8b] - **typings**: define types for symbols binding (Michaël Zasso) #40143
- [ced8467e20] - **typings**: define types for worker and messaging bindings (Michaël Zasso) #40143
- [66d3101677] - **(SEMVER-MINOR) util**: improve ansi escape code regex (Colin Ihrig) #40214
- [f4164fa4c3] - **(SEMVER-MINOR) util**: expose stripVTControlCharacters() (Colin Ihrig) #40214

## 2021-09-22, Version 16.10.0 (Current), @BethGriggs

### Notable Changes

- [fb226ff2ee] - **(SEMVER-MINOR) crypto**: add rsa-pss keygen parameters (Filip Skokan) #39927
- [85206b7311] - **deps**: upgrade npm to 7.24.0 (npm team) #40167
- [98f56d179c] - **deps**: update Acorn to v8.5.0 (Michaël Zasso) #40015
- [9655329772] - **doc**: add Ayase-252 to collaborators (Qingyu Deng) #40078
- [59fff925be] - **(SEMVER-MINOR) fs**: make `open` and `close` stream override optional when unused (Antoine du Hamel) #40013
- [a63a4bce90] - **(SEMVER-MINOR) http**: limit requests per connection (Artur K) #40082
  - The maximum number of requests a socket can handle before closing keep alive connection can be set with `server.maxRequestsPerSocket`.

- [9a672961fa] - **(SEMVER-MINOR) src:** add `--no-global-search-paths` cli option (Cheng Zhao) #39754
  - Adds the `--no-global-search-paths` command-line option to not search modules from global paths like `$HOME/.node_modules` and `$NODE_PATH`.
- [fe920b6cbf] - **(SEMVER-MINOR) src:** make `napi_create_reference` accept symbol (JckXia) #39926
- [97f3072ceb] - **(SEMVER-MINOR) stream:** add signal support to pipeline generators (Robert Nagy) #39067

## Commits

- [b7dc651884] - **build:** run modified internet tests on GitHub Actions (Rich Trott) #40100
- [8d5787a043] - **build:** add `.mailmap/AUTHORS` to `paths-ignore` for test-macos (Rich Trott) #40109
- [9793e7ff08] - **build:** add `.mailmap/AUTHORS` to `path-ignore` for test-asan (Rich Trott) #40109
- [886921de38] - **build:** add `paths-ignore` for build-tarball workflow (Rich Trott) #40109
- [01b1946b38] - **build:** only lint version numbers for pull requests (Michaël Zasso) #40027
- [c804d070a6] - **build:** add daily/on-demand internet test workflow (Rich Trott) #40086
- [7bddaecbf4] - **build:** add YAML linting to GitHub Actions (Rich Trott) #40007
- [5a20f9055c] - **build:** add YAML linting (Rich Trott) #40007
- [0b30867c08] - **build:** run `AUTHORS` update weekly (Rich Trott) #40004
- [22a78a75ee] - **build:** preserves symbols during LTO with macOS linker (Jesse Chan) #39839
- [f0dec58d43] - **crypto:** fix webcrypto `ed(25519|448) spki/pkcs8 import` (Filip Skokan) #40131
- [d80082f3eb] - **crypto:** use `validateObject` (Voltrex) #39872
- [d657ae6f8a] - **crypto:** fix RSA-PSS default `saltLength` (Tobias Nießen) #39999
- [fc45cbe7a8] - **crypto:** fix default MGF1 hash for OpenSSL 3 (Tobias Nießen) #40031
- [105c9e6d3b] - **crypto:** check webcrypto asymmetric key types during `importKey` (Filip Skokan) #39962
- [fb226ff2ee] - **(SEMVER-MINOR) crypto:** add `rsa-pss keygen parameters` (Filip Skokan) #39927
- [85206b7311] - **deps:** upgrade npm to 7.24.0 (npm team) #40167
- [06f6e01f37] - **deps:** add riscv64 into openssl Makefile and gen openssl-riscv64 (Lu Yahan) #40063
- [9c76c69972] - **deps:** patch V8 to 9.3.345.19 (Michaël Zasso) #40108
- [0df47d5843] - **deps:** upgrade npm to 7.23.0 (npm team) #40055



- [b3843bf417] - **deps**: patch v8 for vs2019 in std17 (Jiawen Geng) #40060
- [67759585a0] - **deps**: patch for v8 on windows (Jiawen Geng) #40010
- [98f56d179c] - **deps**: update Acorn to v8.5.0 (Michaël Zasso) #40015
- [5c6708582e] - **dns**: cleanup validation (Voltrex) #40061
- [e4825dcfd5] - **doc**: changes default values for fs.read fns (RISHABH BUDHIRAJA) #39163
- [0254b4b0d3] - **doc**: fix markdown indentation in lists (Michaël Zasso) #40142
- [b6939a3419] - **doc**: prepare README.md for stricter linting (Rich Trott) #40137
- [a07d8444f9] - **doc**: fix comma splice (Rich Trott) #40133
- [2488bc0c4f] - **doc**: clean up weird notes about reentrancy (Anna Henningsen) #40107
- [8b80dcbc30] - **doc**: correct parameters in fs and stream documentation (vipul kumar) #39984
- [1ced732078] - **doc**: fix CJS-ESM selector in Safari (Bradley Farias) #40135
- [7fdb12739d] - **doc**: add timeout.close (Nikita Galkin) #40036
- [81cb14bb58] - **doc**: clarify that ObjectWrap requires manual cleanup on shutdown (Gerhard Stöbich) #40074
- [8aad81dd99] - **doc**: add full list of subsystems (FrankQiu) #39971
- [9655329772] - **doc**: add Ayase-252 to collaborators (Qingyu Deng) #40078
- [6d399e11e9] - **doc**: fix CCM cipher example in MJS (Tobias Nießen) #39949
- [d426ee9b17] - **doc**: fix property name ‘detail’ of performanceEntry (Christian Boehlke) #40019
- [846e7e880e] - **doc**: fix list indentation in corepack.md (Alexey Ten) #40029
- [b6dd2ea930] - **doc**: fix missing history version in fs.md (Antoine du Hamel) #39972
- [f666f5a8d1] - **events**: fix duplicate require which cause performance penalty (wwwzbowcom) #39892
- [59fff925be] - **(SEMVER-MINOR) fs**: make open and close stream override optional when unused (Antoine du Hamel) #40013
- [a63a4bce90] - **(SEMVER-MINOR) http**: limit requests per connection (Artur K) #40082
- [bc9c2ca6af] - **http**: remove CRLF variable (shfshanyue) #40101
- [dd50b91f77] - **lib**: remove useless statement (Maledong) #39983
- [608528028c] - **lib**: avoid creating a throw away object in validateObject (Antoine du Hamel) #39807
- [edcfff9aea] - **lib**: use standard property names (null) #39981
- [640353af86] - **lib, repl**: ignore non-canBeRequiredByUsers built-in (Khaidi Chu) #39942
- [4444b5c938] - **meta**: update AUTHORS (Node.js GitHub Bot) #40148
- [4993318862] - **meta**: update GeoffreyBooth email addresses in AUTHORS and .mailmap (Rich Trott) #40132

- [98d42fa1f4] - **meta**: add mailmap entry for LPardue (Rich Trott) #40129
- [effdfa91be] - **meta**: update GeoffreyBooth email address (Geoffrey Booth) #40102
- [588257c00a] - **meta**: add .mailmap entry for arcanis (Rich Trott) #40103
- [7ee3fbd1e0] - **meta**: update AUTHORS (Node.js GitHub Bot) #40087
- [2a41530a5e] - **meta**: consolidate AUTHORS entry for mikemaccana (Rich Trott) #40051
- [a71579b05e] - **meta**: add more mailmap entries for bajtos (Rich Trott) #40023
- [29104f5e64] - **meta**: consolidate AUTHORS entries for mithunsasidharan (Rich Trott) #40003
- [381293f54a] - **meta**: update AUTHORS (Node.js GitHub Bot) #39957
- [1eca9bc5b2] - **module**: support pattern trailers for imports field (Guy Bedford) #40041
- [7376edca6d] - **module**: deprecate trailing slash pattern mappings (Guy Bedford) #40039
- [92f182b23d] - **module**: fix \$ pattern replacements (Guy Bedford) #40044
- [d6124d8259] - **repl**: fix top level await with surrogate characters (Mestery) #39931
- [9a672961fa] - **(SEMVER-MINOR) src**: add --no-global-search-paths cli option (Cheng Zhao) #39754
- [51f9ad4897] - **(SEMVER-MINOR) src**: add option to disable global search paths (Cheng Zhao) #39754
- [95528b284d] - **src**: remove unnecessary comment and add a CHECK in crypto\_tls.cc (Darshan Sen) #39991
- [31994fbf8e] - **src**: register zlib external references for snapshot (Joyee Cheung) #40050
- [cfcd57182b] - **src**: fix -Wunreachable-code-return error (Shelley Vohr) #40034
- [9f3a015b60] - **src**: add option to disable loading native addons (Dominic Elm) #39977
- [570bef1710] - **Revert** “**src**: skip test\_fatal/test\_threads for Debug builds” (Anna Henningsen) #39954
- [842f936e04] - **src**: use Isolate::TryGetCurrent where appropriate (Anna Henningsen) #39954
- [fe920b6cbf] - **(SEMVER-MINOR) src**: make napi\_create\_reference accept symbol (JckXia) #39926
- [73aa4e34ff] - **src**: fix C4805 MSVC warning (Michaël Zasso) #39998
- [826eee363c] - **src**: register external references of PipeWrap for snapshot (Joyee Cheung) #39961
- [7a17cbfdea] - **src**: register external references of TTYWrap for snapshot (Joyee Cheung) #39961
- [00cca48081] - **src**: register external references of TCPWrap for snapshot (Joyee Cheung) #39961
- [6095fb07b6] - **src**: register external references of SignalWrap for snapshot (Joyee Cheung) #39961

- [db75711c5c] - **src**: register missing process methods external references (Joyee Cheung) #39961
- [b4e074c295] - **src**: register missing stream wrap external references (Joyee Cheung) #39961
- [a2c1c3ef64] - **src**: register external references of BaseObject for snapshot (Joyee Cheung) #39961
- [6fdf02523e] - **src**: register external references of node-report for snapshot (Joyee Cheung) #39961
- [bef78a2f88] - **src**: register external references of dtrace for snapshot (Joyee Cheung) #39961
- [97f3072ceb] - **(SEMVER-MINOR) stream**: add signal support to pipeline generators (Robert Nagy) #39067
- [6be405bd7b] - **test**: fix test-dgram-udp6-link-local-address on Windows (Michaël Zasso) #40005
- [ec94bec9a3] - **test**: do not run `test-corepack-yarn-install` with no internet (Antoine du Hamel) #40090
- [4aa2610252] - **test**: update OpenSSL3 error messages for 3.0.0+quic (Daniel Bevenius) #40093
- [4367a61a9b] - **test**: mark test-crypto-timing-safe-equal-benchmarks flaky (Richard Lau) #40065
- [5b5e27281c] - **test**: fix internet/test-dns (Rich Trott) #40083
- [67bbfeb7e1] - **test**: make tests pass on Windows with Unix EOL (Michaël Zasso) #40002
- [a8c99d9f09] - **tools**: update doc generator dependencies (Michaël Zasso) #40042
- [ec6de1195a] - **tools**: update ansi-regex in lint-md rollup (Rich Trott) #40112
- [d55804ca4e] - **tools**: update all dependencies of markdown linter (Michaël Zasso) #40035
- [f03bae7c82] - **tools**: update remark-html to v13.0.2 (Michaël Zasso) #40043
- [99af21292f] - **tools,build**: update YAML files in preparation for linting (Rich Trott) #40007
- [590ace418d] - **tools,doc**: fix misrendering of consecutive JS blocks (Rich Trott) #40146
- [5983568204] - **worker**: avoid potential deadlock on NearHeapLimit (Santiago Gimeno) #38403

## 2021-09-10, Version 16.9.1 (Current), @richardlau

### Notable Changes

This release fixes a regression introduced by the V8 9.3 update in Node.js 16.9.0.

## Commits

- [04f1943109] - **deps:** V8: cherry-pick 9a607043cb31 (Jiawen Geng) #40046

## 2021-09-07, Version 16.9.0 (Current), @targos

### Notable Changes

**Corepack** Node.js now includes Corepack, a script that acts as a bridge between Node.js projects and the package managers they are intended to be used with during development. In practical terms, **Corepack will let you use Yarn and pnpm without having to install them** - just like what currently happens with npm, which is shipped in Node.js by default. Please head over to the Corepack documentation page for more information on how to use it.

Contributed by Maël Nison - #39608

**V8 9.3** V8 is updated to version 9.3, which includes performance improvements and new JavaScript features.

**Object.hasOwn** `Object.hasOwn` is a static alias for `Object.prototype.hasOwnProperty.call`:

```
Object.hasOwn({ value: 42 }, 'value'); // Returns `true`.
```

**Error cause** Errors can now be optionally constructed with a **cause** option, pointing to another error. This adds a **cause** property on the new error:

```
const error1 = new Error('Error one');
const error2 = new Error('Error two', { cause: error1 });
// error2.cause === error1
```

Contributed by Michaël Zasso - #39947

### Other Notable Changes

- [34c627e4bc] - **(SEMVER-MINOR) crypto:** add RSA-PSS params to asymmetricKeyDetails (Tobias Nießen) #39851
- [20da0a5379] - **(SEMVER-MINOR) module:** support pattern trailers (Guy Bedford) #39635
- [cb44781371] - **(SEMVER-MINOR) stream:** add stream.compose (Robert Nagy) #39029

## Commits

- [2343c394fb] - **async\_hooks:** use resource stack for AsyncLocalStorage run (Stephen Belanger) #39890
- [00951827cd] - **Revert** “**build:** add windows-2022 to GitHub test matrix” (Michaël Zasso) #39982

- [e7834535b3] - **build**: add windows-2022 to GitHub test matrix (Michaël Zasso) #39857
- [c49b0c0dd4] - **build**: add support for Visual Studio 2022 (Michaël Zasso) #39857
- [afdb665e57] - **build**: fix find-inactive-collaborators workflow token (Rich Trott) #39909
- [0ff88f362f] - **build**: update token used for pull requests (Rich Trott) #39907
- [beca890330] - **build**: adapt v8\_pch.h to V8 9.3 (Michaël Zasso) #39469
- [2170346aa3] - **build**: reset embedder string to “-node.0” (Michaël Zasso) #39947
- [d33ab968ab] - **cluster**: fix comment regarding child\_process file (Yash Ladha) #39308
- [585199497f] - **crypto**: fix regression in RSA-PSS keygen (Tobias Nießen) #39937
- [34c627e4bc] - **(SEMVER-MINOR) crypto**: add RSA-PSS params to asymmetricKeyDetails (Tobias Nießen) #39851
- [1dd91582da] - **crypto**: fix rsa-pss one-shot sign/verify error handling (Filip Skokan) #39830
- [20cf47004e] - **crypto**: fix JWK RSA-PSS SubtleCrypto.exportKey (Filip Skokan) #39828
- [e25dc8e470] - **deps**: upgrade npm to 7.21.1 (npm team) #39904
- [9270684837] - **deps**: update archs files for OpenSSL-1.1.1l+quic (Richard Lau) #39867
- [4b5bbec6cc] - **deps**: upgrade openssl sources to OpenSSL\_1\_1\_1l+quic (Richard Lau) #39867
- [71659fd4ba] - **(SEMVER-MINOR) deps**: add corepack (Maël Nison) #39608
- [7470db0dfb] - **deps**: restore minimum ICU version to 68 (Michaël Zasso) #39470
- [92d83d18d2] - **deps**: make V8 9.3 abi-compatible with 9.0 (Michaël Zasso) #39947
- [0140face81] - **deps**: V8: cherry-pick 00bb1a77c03e (Darshan Sen) #39829
- [3e1053e755] - **deps**: V8: cherry-pick 81814ed44574 (Stephen Belanger) #39719
- [d9d0104878] - **deps**: silence irrelevant V8 warning (Michaël Zasso) #38990
- [cd9b03ea40] - **deps**: silence irrelevant V8 warnings (Michaël Zasso) #37587
- [b83cab712f] - **deps**: fix V8 build issue with inline methods (Jiawen Geng) #35415
- [068824d754] - **deps**: make v8.h compatible with VS2015 (Joao Reis) #32116
- [54f4f1af50] - **deps**: V8: forward declaration of Rtl\*FunctionTable (Refael Ackermann) #32116
- [10ba1cb8b2] - **deps**: V8: patch register-arm64.h (Refael Ackermann) #32116

- [3ce6f72124] - **deps:** V8: un-cherry-pick bd019bd (Refael Ackermann) #32116
- [f43c292520] - **(SEMVER-MINOR) deps:** update V8 to 9.3.345.16 (Michaël Zasso) #39947
- [9e782eb758] - **doc:** remove {C,Dec}ompressionStream documentation (Luigi Pinca) #39899
- [7857e9cc77] - **doc:** add descriptions about when `options.mode` is ignored (Ray) #39881
- [d43b555047] - **doc:** remove danbev from TSC member list (Daniel Bevenius) #39978
- [fc01dd916e] - **doc:** add missing changes to `generateKeyPair(Sync)` (Tobias Nießen) #39963
- [953f2e9f88] - **doc:** add nodejs/tweet issue creation to sec. doc (Daniel Bevenius) #39940
- [29c4b07716] - **doc:** update WASI example to use `import.meta.url` (Guy Bedford) #39925
- [9eb4a70c14] - **doc:** move reference to OpenSSL flags `SSL_OP_*` (Tobias Nießen) #39935
- [8ea4befc82] - **doc:** add docs for `duplex.allowHalfOpen` property (Tim Perry) #39126
- [bc2b73ec9b] - **doc:** add FrankQiu to a triager (FrankQiu) #39922
- [8b68f8ec38] - **doc:** add VoltrexMaster to triagers (voltrexmaster) #39920
- [3a8f77ac0d] - **doc:** document JavaScript tool for benchmark comparison (Michaël Zasso) #39835
- [4ac703ca8e] - **doc:** add Mesteery to triagers (Mestery) #39887
- [d059a5186b] - **doc:** update maintaining openssl guide (Richard Lau) #39878
- [486150580c] - **doc:** move `ERR_WORKER_UNSPPORTED_EXTENSION` to legacy (Qingyu Deng) #39788
- [a4b8c13798] - **events:** protect property defs against prototype pollution (James M Snell) #39773
- [cfbe9065ae] - **events:** add brand checks for detached accessors (James M Snell) #39773
- [112af69194] - **fs:** add docs and tests for `AsyncIterable` support in `fh.writeFile` (Antoine du Hamel) #39836
- [402071bc45] - **meta:** remove duplicate AUTHORS entry for NigelKi-bodeaux (Rich Trott) #39967
- [3588f07603] - **meta:** add mailmap entry for Ethan-Arrowood (Rich Trott) #39930
- [259e0cf4d7] - **meta:** add mailmap entry for branisha (Rich Trott) #39889
- [bc236a6714] - **meta:** update .mailmap to remove duplicate AUTHORS entry for addaleax (Rich Trott) #39880
- [20da0a5379] - **(SEMVER-MINOR) module:** support pattern trailers (Guy Bedford) #39635
- [879dc4658e] - **src:** remove usage of `AllocatedBuffer` from `src/node_buffer.cc` (Darshan Sen) #39941

- [79ce096470] - **src**: remove extra semicolons outside fns (Shelley Vohr) #39800
- [cb44781371] - **(SEMVER-MINOR) stream**: add `stream.compose` (Robert Nagy) #39029
- [ca9b781d20] - **test**: use `assert.match` instead of `regexp.test` (Michaël Zasso) #39928
- [007e2855af] - **test**: use error code mapping in place of raw `errno` (Darshan Sen) #38675
- [00529b0ef2] - **test**: add test to verify other extension can be loaded by worker (Qingyu Deng) #39788
- [4e7212c88c] - **test**: update error message keywords (leeight) #39826
- [549d717722] - **test**: adapt test-fs-read to V8 9.3 (Michaël Zasso) #39469
- [644b25e068] - **test**: adapt test-util-inspect to V8 9.3 (Michaël Zasso) #39469
- [105bff9ea5] - **test**: adapt test-v8-flags to V8 9.3 (Michaël Zasso) #39469
- [d92bd9a982] - **tools**: add support for import assertions in linter (Antoine du Hamel) #39924
- [9763561e30] - **tools**: update gyp-next to v0.10.0 (Michaël Zasso) #39857
- [9f105c73fc] - **tools**: update V8 gypfiles for 9.3 (Michaël Zasso) #39469
- [16271d2f50] - **worker**: remove file extension check (Qingyu Deng) #39788
- [3b1ce93e03] - **worker**: add brand checks for detached MessageEvent accessors (James M Snell) #39773

## 2021-08-25, Version 16.8.0 (Current), @targos

### Notable Changes

- [2e90b10f35] - **doc**: deprecate type coercion for `dns.lookup` options (Antoine du Hamel) #38906
- [a6d50a18a0] - **(SEMVER-MINOR) stream**: add `stream.Duplex.from` utility (Robert Nagy) #39519
- [af7047a815] - **(SEMVER-MINOR) stream**: add `isDisturbed` helper (Robert Nagy) #39628
- [66400374de] - **(SEMVER-MINOR) util**: expose `toUSVString` (Robert Nagy) #39814

### Commits

- [90bf247a55] - **build**: fix update authors commit (Mestery) #39858
- [c968372e37] - **build**: add authors.yml (Tierney Cyren) #35831
- [3f284cf65c] - **build**: add option to hide console window (Cheng Zhao) #39712
- [a01e3ab41d] - **deps**: V8: cherry-pick 00bb1a77c03e (Darshan Sen) #39829
- [cce95c4c5b] - **deps**: upgrade npm to 7.21.0 (Myles Borins) #39813
- [254810a22e] - **doc**: add duplicate CVE check in sec. release doc (Daniel Bevenius) #39845

- [8c50d16712] - **doc**: improve description of the triagers team (Michaël Zasso) #39833
- [c02165d992] - **doc**: update instructions for cc (Michael Dawson) #39674
- [208305fd8f] - **doc**: move util.toUSVString() outside of deprecated group (Luigi Pinca) #39840
- [2e90b10f35] - **doc**: deprecate type coercion for `dns.lookup` options (Antoine du Hamel) #38906
- [8460a3216c] - **doc**: deprecate using non-boolean values in the `verbatim` option (Antoine du Hamel) #38906
- [3041d57201] - **doc**: fix malformed changelog entries (Rich Trott) #39791
- [2b02f747c3] - **doc**: fix lint errors in packages.md (Rich Trott) #39792
- [a387600d8f] - **doc**: add example of self-reference in scoped packages (Jesús Leganés-Combarro 'piranna') #37630
- [7a25bf3a6d] - **doc**: add himadriganguly as a triager (Himadri Ganguly) #39757
- [d1900f43ce] - **fs**: combine require() and destructure (Colin Ihrig) #39806
- [158d4464d2] - **meta**: add gyp as owner of gyp files and tools/gyp (Mary Marchini) #34847
- [8fa38500f2] - **policy**: canonicalize before resolving specifiers (Bradley Farias) #37863
- [a7a217be13] - **repl**: fix tla function hoisting (Don Jayamanne) #39745
- [3a8399ee61] - **src**: return Maybe<bool> from InitializeContextRuntime() (Darshan Sen) #39695
- [a704c9dfce] - **(SEMVER-MINOR) src**: call overload ctor from the original ctor (Darshan Sen) #39768
- [0918ea0683] - **(SEMVER-MINOR) src**: add a constructor overload for CallbackScope (Darshan Sen) #39768
- [a6d50a18a0] - **(SEMVER-MINOR) stream**: duplexify (Robert Nagy) #39519
- [af7047a815] - **(SEMVER-MINOR) stream**: add isDisturbed helper (Robert Nagy) #39628
- [f98311a7c8] - **tools**: update workflow to open a pull request (Rich Trott) #39825
- [d33f897509] - **tools**: use find-inactive-collaborators to modify README.md (Rich Trott) #39825
- [d82ee96861] - **tools**: update gyp-next to v0.9.5 (Jiawen Geng) #39818
- [79079ea01b] - **tools**: fix markdown linting (Rich Trott) #39832
- [01093b07cc] - **tools**: update markdown linter dependencies and move to ESM (Antoine du Hamel) #39801
- [9dc0c91392] - **tools**: update rollup to latest version in markdown linter (Rich Trott) #39797
- [c34e2534ab] - **tools**: update markdown lint dependencies (Rich Trott) #39770
- [66400374de] - **(SEMVER-MINOR) util**: expose toUSVString (Robert Nagy) #39814



## 2021-08-17, Version 16.7.0 (Current), @danielleadams

### Notable Changes

- **fs:**
  - experimental: add recursive cp method (Benjamin Coe) #39372

### Commits

- [a80c989306] - **async\_hooks:** merge resource\_symbol with owner\_symbol (Darshan Sen) #38468
- [69a2a6b6c3] - **bootstrap:** call \_undestroy() inside \_destroy for stdout and stderr (Matteo Collina) #39685
- [5bc31ea0aa] - **buffer:** add endings option, remove Node.js specific encoding option (James M Snell) #39708
- [091a579275] - **(SEMVER-MINOR) buffer:** add Blob.prototype.stream method and other cleanups (James M Snell) #39693
- [097d898e58] - **build:** run coverage for inspector protocol changes (Richard Lau) #39725
- [cf028df0ed] - **build:** fix V8 build with pointer compression (Michaël Zasso) #39664
- [9d38400de1] - **build:** exclude markdown files from some GitHub Actions (Rich Trott) #39565
- [eeb804a7b7] - **build:** use lts shorthand in GitHub Actions (Rich Trott) #39538
- [93a904d0ba] - **(SEMVER-MINOR) crypto:** implement webcrypto.randomUUID (Michaël Zasso) #39648
- [3321b65a5a] - **debugger:** prevent simultaneous heap snapshots (Rich Trott) #39638
- [6c375e18b6] - **debugger:** remove undefined parameter (Rich Trott) #39570
- [103bf20988] - **deps:** V8: cherry-pick 81814ed44574 (Stephen Belanger) #39719
- [cf5e5b5711] - **deps:** upgrade to libuv 1.42.0 (Luigi Pinca) #39525
- [5f92d2fe6d] - **dgram:** use simplified validator (Vltrex) #39753
- [c7e918b06a] - **(SEMVER-MINOR) dns:** add “tries” option to Resolve options (Luan Devecchi) #39610
- [5d66646b71] - **doc:** correct cjs code to match mjs code (Raz Luvaton) #39509
- [f18bb2a0f1] - **doc:** fix typo in hmac.paramNames default (Justin) #39766
- [338a166e83] - **doc:** fix fs.rmdir recursive option deprecation history (Antoine du Hamel) #39728
- [bfb1dc0a2c] - **doc:** fixed variable names in queueMicrotask example (ashish maurya) #39634
- [08b31f12f8] - **doc:** change “Version 4 UUID” to “version 4 UUID” (Tobias Nießen) #39682
- [f5200f9785] - **doc:** update debugger.md description and examples (Rich

- Trott) #39661
- [4700f1e529] - **doc**: fix color contrast issue in light mode (Rich Trott) #39660
  - [88c83a4698] - **(SEMVER-MINOR) doc**: add missing change to resolver ctor (Luan Devecchi) #39610
  - [760cafa5ed] - **doc**: fix typo in `url.md` (Howie Zhao) #39666
  - [9ab5503693] - **doc**: add point to ask H1 reporter about credit (Daniel Bevenius) #39585
  - [7514405456] - **doc**: update min mac ver + move mac arm64 to tier 1 (Ash Cripps) #39586
  - [d7c8c6dcee] - **doc**: add missing `introduced_in` metadata (Richard Lau) #39575
  - [8072517097] - **doc**: add code examples to `Writable.destroy()` and `Writable.destroyed` (Juan José Arboleda) #39491
  - [55f47cc2d0] - **doc**: add `String.prototype.at` and `%TypedArray%.prototype.at` (Jordan Harband) #39583
  - [0c0412e2c4] - **doc**: move `NODE_MODULE_VERSION` in release guide (Richard Lau) #39544
  - [5df74f9b21] - **doc**: remove outdated ARM information from release guide (Richard Lau) #39544
  - [8eccb11ea0] - **doc**: fence command examples in release guide (Richard Lau) #39544
  - [0bd97e1f2d] - **doc**: update backport labels in release guide (Richard Lau) #39544
  - [2129ad6a0a] - **doc**: add code example to `fs.truncate` method (Juan José Arboleda) #39454
  - [3ff5e153ef] - **doc**: add code example to `http.createServer` method (Juan José Arboleda) #39455
  - [7d0c869cfa] - **doc**: add PerformanceObserver `buffered` document (legendecas) #39514
  - [0dc167a03f] - **(SEMVER-MINOR) fs**: add recursive `cp` method (Benjamin Coe) #39372
  - [54dd3df943] - **http**: decodes `url.username` and `url.password` for authorization header (Lew Gordon) #39310
  - [81e62f67bf] - **inspector**: update `inspector_protocol` to 89c4adf (Rich Trott) #39650
  - [793fee4915] - **inspector**: update `inspector_protocol` to 8ec18cf (Rich Trott) #39614
  - [5afdc1f4c0] - **lib**: simplify validators (Voltrex) #39753
  - [ca3cb96d25] - **lib**: cleanup validation (Voltrex) #39652
  - [cc08d3062f] - **lib**: cleanup instance validation (Voltrex) #39656
  - [2751cdf6f9] - **lib**: use helper for readability (Voltrex) #39649
  - [c68415cba2] - **lib**: use validators (Voltrex) #39663
  - [be2d60dd1d] - **lib**: use validator (Voltrex) #39547
  - [486d51ac0c] - **lib**: use `validateObject` (Voltrex) #39605
  - [058e882a2a] - **lib**: use `ERR_ILLEGAL_CONSTRUCTOR` (Mestery)

- #39556
- [07cad4432] - **meta:** consolidate AUTHORS entries for ooHmartY (Rich Trott) #39705
- [6c788b8030] - **meta:** consolidate AUTHORS entries for homosaur (Rich Trott) #39705
- [07351edebe] - **meta:** consolidate AUTHORS entries for Ayase-252 (Rich Trott) #39705
- [5fe282769b] - **meta:** consolidate AUTHORS entries for robin-drexler (Rich Trott) #39705
- [fc2a626357] - **meta:** consolidate AUTHORS entries for samshull (Rich Trott) #39705
- [67cfc66a47] - **meta:** update AUTHORS (Rich Trott) #39705
- [91008fbdeb] - **meta:** consolidate email addresses for MarshallOfSound (Rich Trott) #39651
- [a76b63536a] - **meta:** consolidate email addresses for tadjik1 (Rich Trott) #39651
- [aaab2095db] - **meta:** consolidate email addresses for szmarczak (Rich Trott) #39651
- [f413a9d83c] - **meta:** update AUTHORS (Rich Trott) #39636
- [7a91d4bfe9] - **meta:** simplify mailmap (Rich Trott) #39612
- [4ec5d2de5d] - **meta:** consolidate emails for tadhgcreedon (Rich Trott) #39611
- [bb88c38eac] - **meta:** consolidate emails for timcosta (Rich Trott) #39611
- [0920a8cf6f] - **meta:** consolidate emails for timruffles (Rich Trott) #39611
- [1474a9d4b1] - **meta:** update AUTHORS (Rich Trott) #39629
- [c59e3ec685] - **meta:** add mailmap entry for ryzokuken (Rich Trott) #39596
- [34f4bb8277] - **meta:** add mailmap entry for uttampawar (Rich Trott) #39596
- [fd213edda2] - **meta:** add mailmap entry for dmabupt (Rich Trott) #39596
- [6b664e224b] - **meta:** align README/.mailmap/AUTHORS email entries (Rich Trott) #39505
- [96d8ecbd66] - **meta:** add mailmap entry for garygsc (Rich Trott) #39588
- [16d85f3f48] - **meta:** add mailmap entry for ttzztztz (Rich Trott) #39588
- [60ab111fdb] - **meta:** update AUTHORS (Rich Trott) #39587
- [b43f87d729] - **meta:** update .mailmap to remove duplication in AUTHORS (Rich Trott) #39561
- [6f4a2aa5a4] - **meta:** add .mailmap entries to remove AUTHORS duplicates (Rich Trott) #39560
- [86d144c500] - **meta:** add .mailmap entry to remove duplication in AUTHORS (Rich Trott) #39559
- [110c088f02] - **meta:** update collaborator email in AUTHORS/.mailmap (Rich Trott) #39521
- [72af147bb5] - **meta:** update collaborator email in README (Rich Trott) #39521

- [23bc4cfb21] - **meta**: update collaborator email in AUTHORS/.mailmap (Rich Trott) #39521
- [e4289728c7] - **meta**: move gdams to emeritus (Rich Trott) #39539
- [4df59bc727] - **module**: add some typings to `internal/modules/esm/resolve` (Antoine du Hamel) #39504
- [b5858589d0] - **node-api**: handle pending exception in cb wrapper (Michael Dawson) #39476
- [016b7ba616] - **perf\_hooks**: fix PerformanceObserver gc crash (James M Snell) #39550
- [b37575b67c] - **perf\_hooks**: fix performance timeline wpt failures (legendecas) #39532
- [64c02eb3cc] - **(SEMVER-MINOR) perf\_hooks**: web performance timeline compliance (legendecas) #39297
- [7ff21397d6] - **policy**: fix integrity when `DEFAULT_ENCODING` is set (Tobias Nießen) #39750
- [03be967cad] - **src**: fix TextDecoder final flush size calculation (James M Snell) #39737
- [9046e78943] - **src**: fix crash in `AfterGetAddrInfo` (Anna Henningsen) #39735
- [2a00ef5ede] - **(SEMVER-MINOR) src**: fix align in `cares_wrap.h` (Luan) #39610
- [60a2b31c68] - **src**: add cosmetic space character to `async_wrap.h` file (Juan José Arboleda) #39459
- [cd9b0bf68c] - **stream**: ensure `text()` stream consumer flushes correctly (James M Snell) #39737
- [f57a0e4d8b] - **(SEMVER-MINOR) stream**: utility consumers for web and node.js streams (James M Snell) #39594
- [975edf5330] - **stream**: clean `endWritableNT` (Mestery) #39645
- [9e38fc6757] - **(SEMVER-MINOR) stream**: add `readableDidRead` if has been read from (Robert Nagy) #39589
- [a5ded4a85a] - **test**: use simplified validator (voltrexmaster) #39753
- [53cf53c95a] - **(SEMVER-MINOR) test**: enable `blob.prototype.stream` tests (James M Snell) #39693
- [7e9884598f] - **test**: update WPT abort tests (Michaël Zasso) #39697
- [94381fbdf5] - **test**: update WPT common and resources (Michaël Zasso) #39697
- [34a041a846] - **test**: fix test-debugger-heap-profiler for workers (Richard Lau) #39687
- [9f5acfa90e] - **test**: increase memory for coverage action (Benjamin Coe) #39690
- [0be15cedc4] - **test**: use template to concatenate string (Himadri Ganguly) #39621
- [952a5282e2] - **(SEMVER-MINOR) test**: pull Web Platform Tests for WebCryptoAPI (Michaël Zasso) #39648
- [3622fb1e03] - **test**: deflake `test-http2-buffersize` (Luigi Pinca) #39591
- [1962c7c7b3] - **test**: convert anonymous function to arrow function (Hi-

- madri Ganguly) #39604
- [635e1a0274] - **test**: add test-debugger-breakpoint-exists (Rich Trott) #39570
- [cff2aea5df] - **test**: add known issues test for debugger heap snapshot race (Rich Trott) #39557
- [5e1011238a] - **tools**: bump remark-preset-lint-node to 3.0.0 (Rich Trott) #39755
- [eb741253fd] - **tools**: update path-parse in markdown linter package-lock file (Rich Trott) #39729
- [52a172f983] - **tools**: fix more build warnings in inspector\_protocol (Richard Lau) #39725
- [77f9c1fa98] - **tools**: cherry-pick ffb34b6d5dbf0 (Darshan Sen) #39725
- [b9510d21c9] - **tools**: update inspector\_protocol to e8ba1a7 (Rich Trott) #39694
- [8d509d8773] - **tools**: update inspector\_protocol to 39ca567 (Rich Trott) #39694
- [ee7142fa37] - **tools**: update inspector\_protocol to 97d3146 (Rich Trott) #39694
- [c6323d847d] - **Revert** “**tools**: fix compiler warning in inspector\_protocol” (Rich Trott) #39694
- [6e19c166e4] - **tools**: update inspector\_protocol to a53e96d31a2755eb16ca37 (Rich Trott) #39694
- [61c53f39d2] - **tools**: update inspector\_protocol to fe0467fd105a (Rich Trott) #39694
- [b1b6f20353] - **tools**: improve error detection in find-inactive-collaborators (Rich Trott) #39617
- [d1360fcf48] - **tools**: update ESLint to 7.32.0 (Luigi Pinca) #39602
- [af1c782cad] - **tools**: update ESLint to 7.31.0 (Colin Ihrig) #39424
- [37dda19461] - **(SEMVER-MINOR)** **url,buffer**: implement URL.createObjectURL (James M Snell) #39693
- [dcab88ad38] - **worker**: add brand checks for detached properties/methods (James M Snell) #39763

## 2021-08-11, Version 16.6.2 (Current), @BethGriggs

This is a security release.

### Notable Changes

- **CVE-2021-3672/CVE-2021-22931**: Improper handling of untypical characters in domain names (High)
  - Node.js was vulnerable to Remote Code Execution, XSS, application crashes due to missing input validation of hostnames returned by Domain Name Servers in the Node.js DNS library which can lead to the output of wrong hostnames (leading to Domain Hijacking) and injection vulnerabilities in applications using the library. You can read

more about it at <https://nvd.nist.gov/vuln/detail/CVE-2021-22931>.

- **CVE-2021-22940:** Use after free on close http2 on stream canceling (High)
  - Node.js was vulnerable to a use after free attack where an attacker might be able to exploit memory corruption to change process behavior. This release includes a follow-up fix for CVE-2021-22930 as the issue was not completely resolved by the previous fix. You can read more about it at <https://cve.mitre.org/cgi-bin/cvename.cgi?name=CVE-2021-22940>.
- **CVE-2021-22939:** Incomplete validation of rejectUnauthorized parameter (Low)
  - If the Node.js HTTPS API was used incorrectly and “undefined” was in passed for the “rejectUnauthorized” parameter, no error was returned and connections to servers with an expired certificate would have been accepted. You can read more about it at <https://nvd.nist.gov/vuln/detail/CVE-2021-22939>.

## Commits

- [054537cdc2] - **deps:** update c-ares to 1.17.2 (Beth Griggs) #39724
- [ac544905b6] - **deps:** reflect c-ares source tree (Beth Griggs) #39653
- [a914b23cbc] - **deps:** apply missed updates from c-ares 1.17.1 (Beth Griggs) #39653
- [31d5773654] - **http2:** add tests for cancel event while client is paused reading (Akshay K) #39622
- [a3c33d4ce7] - **http2:** update handling of rst\_stream with error code NGHTTP2\_CANCEL (Akshay K) #39622
- [6c7fff6f1d] - **tls:** validate “rejectUnauthorized: undefined” (Matteo Collina) nodejs-private/node-private#276

## 2021-08-03, Version 16.6.1 (Current), @targos

### Notable Changes

- Updated npm to 7.20.3 (npm team) #39579
- Reverted an ABI-breaking change from V8 9.2 that could impact some native modules (Michaël Zasso) #39624
- Fixed a bug in error handling known to affect at least Webpack and Jest (Guy Bedford) #39593

## Commits

- [6c769ccedf] - **build:** override python executable path on configure (legendecas) #39465
- [cbf6a01c17] - **crypto:** fix generateKeyPair with encoding ‘jwk’ (himself65) #39319

- [3091295609] - **deps**: revert ABI-breaking change from V8 9.2 (Michaël Zasso) #39624
- [06d7b8e8c8] - **deps**: upgrade npm to 7.20.3 (npm team) #39579
- [7b612fadc2] - **doc**: fix crypto.hkdf callback derivedKey type (Filip Skokan) #39453
- [7a731efd97] - **doc,lib,test**: rename HKDF ‘key’ argument (Tobias Nießen) #39474
- [93bbaa0ce9] - **module**: fix ERR\_REQUIRE\_ESM error for null frames (Guy Bedford) #39593
- [e13162de09] - **module**: refine `enrichCJSError` (Antoine du Hamel) #39507
- [815fbec6f1] - **repl**: do not include legacy getter/setter methods in completion (Anna Henningsen) #39576
- [0405c8d3f0] - **zlib**: avoid converting `Uint8Array` instances to `Buffer` (Antoine du Hamel) #39492

## 2021-07-29, Version 16.6.0 (Current), @BethGriggs

This is a security release.

### Notable Changes

**Say hello to V8 9.2** The V8 engine is updated to version 9.2.230.21.

It notably introduces the new `Array.prototype.at` method (also on Typed Arrays and strings):

```
const array = [1, 2, 3];

console.log(array.at(-1));
// Prints: 3
```

Contributed by Michaël Zasso - #39470

### Other notable changes

- **CVE-2021-22930**: Use after free on close http2 on stream canceling (High) - #39423
  - Node.js is vulnerable to a use after free attack where an attacker might be able to exploit the memory corruption, to change process behavior. You can read more about it in <https://cve.mitre.org/cgi-bin/cvename.cgi?name=CVE-2021-22930>
- [f93d2ac587] - **inspector**: mark as stable (Gireesh Punathil) #37748
- [89b4770d5c] - **punycode**: add pending deprecation (Antoine du Hamel) #38444
- [b67214fe31] - **(SEMVER-MINOR) repl**: enable `--experimental-repl-await` /w opt-out (hemanth.hm) #34733

## Commits

- [b5248d4000] - **async\_hooks**: emit promise trace events from JS (Stephen Belanger) #39135
- [e18778d409] - **async\_hooks**: eliminate native PromiseHook (Stephen Belanger) #39135
- [90b9bb1a7d] - **build**: use Node.js 14 in commit-lint.yml (Rich Trott) #39506
- [5182e26f14] - **build**: reset embedder string to “-node.0” (Michaël Zasso) #39470
- [e1910ef290] - **build**: fix `host_arch_cc()` for AIX/IBM i (Richard Lau) #39481
- [ce2011b7a1] - **build**: update coverage Makefile target comments (Richard Lau) #39365
- [6b055f17b6] - **build**: run workflows when a PR is ready for review (Michaël Zasso) #39405
- [25f45d5018] - **build**: update to `setup-node@v2` (Rich Trott) #39366
- [a7472576d7] - **build**: add `library_files` to gyp variables (himself65) #39293
- [d16d36f1c2] - **crypto**: support `Big(U)Int64Array` in `getRandomValues` (Michaël Zasso) #39443
- [95db54482a] - **debugger**: validate `sec-websocket-accept` response header (Chris Oppewall) #39357
- [3751b92fa2] - **debugger**: rename internal module (Rich Trott) #39378
- [0e5eb8b17d] - **deps**: restore minimum ICU version to 68 (Michaël Zasso) #39470
- [e8da1f25fb] - **(SEMVER-MINOR) deps**: make V8 9.2 abi-compatible with 9.0 (Michaël Zasso) #39470
- [a93e6ef777] - **deps**: V8: backport 5c76da8ddcf8 (Michaël Zasso) #39337
- [d612544199] - **deps**: V8: cherry-pick 359d44df4cdd (Michaël Zasso) #39337
- [c6ec2b4817] - **deps**: V8: cherry-pick 3805a698f7b6 (Michaël Zasso) #39337
- [e6b84dfe84] - **deps**: V8: cherry-pick 56fe020eec0c (Michaël Zasso) #39337
- [2393fae427] - **deps**: V8: cherry-pick 2b77ca200c56 (Michaël Zasso) #39337
- [c8e7d80475] - **deps**: V8: cherry-pick 53784bdb8f01 (Michaël Zasso) #39337
- [65062b3e0d] - **deps**: V8: cherry-pick 7ff6609a5385 (Michaël Zasso) #38990
- [c3efc70df7] - **deps**: V8: cherry-pick a5cea1bfc38c (Michaël Zasso) #38990
- [201da87bc1] - **deps**: V8: cherry-pick 986299250e6d (Richard Lau) #38990
- [794ad2e016] - **deps**: V8: backport 71e8f8bb3c26 (Michaël Zasso) #38990
- [53cc6c8000] - **deps**: V8: cherry-pick 3d24b3ab8af0 (Michaël Zasso)



- #38990
- [7f7cb8bfe1] - **deps:** silence irrelevant V8 warning (Michaël Zasso) #38990
- [16cbd8c8b6] - **deps:** silence irrelevant V8 warnings (Michaël Zasso) #37587
- [98150e2bc6] - **deps:** fix V8 build issue with inline methods (Jiawen Geng) #35415
- [3f3e167fea] - **deps:** make v8.h compatible with VS2015 (Joao Reis) #32116
- [785b8990de] - **deps:** V8: forward declaration of `Rtl*FunctionTable` (Refael Ackermann) #32116
- [38cb655f04] - **deps:** V8: patch register-arm64.h (Refael Ackermann) #32116
- [9082ecef66] - **deps:** V8: un-cherry-pick bd019bd (Refael Ackermann) #32116
- [6114198717] - **(SEMVER-MINOR) deps:** update V8 to 9.2.230.21 (Michaël Zasso) #39470
- [89796d0c7f] - **deps:** bump HdrHistogram\_C to 0.11.2 (Matteo Collina) #39462
- [9dd232c42b] - **deps:** update to cjs-module-lexer@1.2.2 (Guy Bedford) #39402
- [626eb07fda] - **deps:** extract gtest source files to deps/googletest (legendecas) #39386
- [487c45ffda] - **doc:** move lball@redhat.com to emeritus (Lance Ball) #39501
- [5f84f47e13] - **doc:** update AUTHORS (Rich Trott) #39488
- [1d27ae1514] - **doc:** update strategic initiative champion (Rich Trott) #39487
- [e552b1a791] - **doc:** improve node.js+fips instructions (Benjamin Mayr) #39390
- [aa1dfb3111] - **doc:** simplify unnecessarily specific .mailmap entries (Rich Trott) #39430
- [ae69656c61] - **doc:** update checkbox label in backporting guide (Darshan Sen) #39420
- [4fd8db687d] - **doc:** remove `__Addenda__` from headers (Rich Trott) #39427
- [cefd2fb1e4] - **doc:** simplify .mailmap file (Rich Trott) #39418
- [ade2eed9a6] - **doc:** fix broken internal link in http.md (Rich Trott) #39425
- [5fdfcc069f] - **doc:** remove outdated step in onboarding exercise (Rich Trott) #39410
- [94706c7012] - **doc:** revise strategic initiatives text (Rich Trott) #39417
- [9932e3589c] - **doc:** remove typo (extra ' character) (Nikita Rykov) #39414
- [2b92b4ea2d] - **doc:** update mailmap and AUTHORS (Rich Trott) #39393
- [6d6396594b] - **doc:** use a details tag for completed initiatives (Rich Trott) #39416

- [ac43e3331c] - **doc**: update commit-queue.md to indicate GitHub Actions are checked (Rich Trott) #39411
- [75130c94d1] - **doc**: use `__pull request__` instead of `__PR__` in onboarding doc (Rich Trott) #39409
- [20bb3f6df0] - **doc**: add strategic initiatives from TSC repo (Rich Trott) #39394
- [6979313abb] - **doc**: standardize on `__pull request__` (Rich Trott) #39384
- [20124cc275] - **doc**: make minor edits to pull request text (Rich Trott) #39383
- [11482f02cf] - **doc**: add docker-node and build-wg issue contents (Daniel Bevenius) #39215
- [c535956b6e] - **doc**: add instructions for core vuln files (Daniel Bevenius) #39220
- [353a8bb27b] - **doc**: standardize on not capitalizing `__collaborator__` (Rich Trott) #39379
- [9b15e5c155] - **doc**: update mailmap and deduplicate AUTHORS entry (Rich Trott) #39391
- [e44ccd9aad] - **doc**: update AUTHORS (Rich Trott) #39367
- [39e6536a87] - **doc**: move jdalton to emeritus (Rich Trott) #39380
- [bbff5a9e47] - **doc**: edit guide on pull requests (Rich Trott) #39359
- [902ef9aca0] - **doc,meta**: update email addresses for misterdjules (Rich Trott) #39433
- [cc7b61721c] - **doc,tools**: remove `checkLinks.mjs` (Antoine du Hamel) #39206
- [e2fd015cda] - **domain**: do not add domain to promise from other context (Stephen Belanger) #39135
- [93eff3f5a6] - **esm**: refine `ERR_REQUIRE_ESM` errors (Guy Bedford) #39175
- [1fb0954202] - **events**: allow an event to be dispatched multiple times (Luigi Pinca) #39395
- [6f2989c346] - **events**: allow the options argument to be null (Luigi Pinca) #39486
- [72ad6d3f27] - **fs**: check `closing__` in `FileHandle::Close` (James M Snell) #39472
- [8b58e574ba] - **fs**: fix `FileHandle::ClosePromise` to return persisted Promise (James M Snell) #39331
- [9d950a0956] - **http2**: on receiving `rst_stream` with cancel code add it to pending list (Akshay K) #39423
- [19e9accf91] - **inspector**: mark as stable (Gireesh Punathil) #37748
- [e4331cd43d] - **lib**: comment explaining special-case handling of promises (Stephen Belanger) #39135
- [0a47f5fc54] - **meta**: update collaborator email in README (Rich Trott) #39510
- [65020110e8] - **meta**: remove unneeded `.mailmap` entry (Rich Trott) #39512
- [864ef11be8] - **meta**: update email address for collaborator (Rich Trott)

#39511

- [d3f58cb650] - **meta**: align collaborator name in .mailmap/AUTHORS with README (Rich Trott) #39489
- [5f9b2187a1] - **meta**: align email address in README/.mailmap/AUTHORS (Rich Trott) #39503
- [9fbe3f6b49] - **meta**: revise .mailmap for README consistency (Rich Trott) #39457
- [f6fbb38924] - **meta**: alphabetize .mailmap file (Rich Trott) #39434
- [dc9c6aa428] - **meta**: align collaborator email in .mailmap/AUTHORS with README (Rich Trott) #39478
- [febeb0df16] - **meta**: update AUTHORS (Rich Trott) #39461
- [d059ed9242] - **meta**: add .mailmap entry for new email for existing contributor (Rich Trott) #39431
- [cdf7251370] - **process**: add api to enable source-maps programmatically (legendecas) #39085
- [eccc9a6578] - **punycode**: add pending deprecation (Antoine du Hamel) #38444
- [a082a705b3] - **(SEMVER-MINOR) repl**: enable --experimental-repl-await /w opt-out (hemanth.hm) #34733
- [b230ac12d9] - **src**: stop using deprecated v8::ApiObject (Michaël Zasso) #38990
- [929205e6b9] - **src**: use non-deprecated Symbol::Description (Michaël Zasso) #38990
- [42ff6d952a] - **src**: print native module id on native module not found (legendecas) #39460
- [f0287e52aa] - **src**: close HandleWraps instead of deleting them in OnGC-Collect() (Anna Henningsen) #39441
- [2cf52f8db1] - **src**: set SSL\_OP\_ALLOW\_CLIENT\_RENEGOTIATION (Daniel Bevenius) #38753
- [fc138376aa] - **src**: remove unused guards around node-api reference (legendecas) #38334
- [26ada4971c] - **stream**: import internal/util/types instead (James M Snell) #39331
- [e91053a465] - **stream**: implement TextEncoderStream and TextDecoderStream (James M Snell) #39347
- [efe74746f0] - **stream**: fixup property definition to avoid prototype pollution (James M Snell) #39371
- [4709da0372] - **test**: ensure microtask queues are not automatically drained (Jochen Eisinger) #38990
- [86ca9a8a80] - **test**: remove test-debug-args (Michaël Zasso) #38990
- [bbcd651cfd] - **test**: update trace events test expectations (Michaël Zasso) #38990
- [039f64f249] - **test**: fix WASI link test (Richard Lau) #39485
- [b1d38ddc8a] - **test**: update OpenSSL3 error messages for beta-1 (Daniel Bevenius) #39437
- [db4f802fba] - **Revert** “**test**: skip tests for openssl-3.0.0-alpha15” (Daniel

- Bevenius) #39437
- [a30d021b94] - **test**: add test for WebSocket secret verification in debugger (Rich Trott) #39357
- [04355afd24] - **test**: add NumberFormat resolvedOptions test (Richard Lau) #39401
- [d0fb02c26a] - **test**: put common lint exceptions into config file (Rich Trott) #39358
- [259d091366] - **test**: mark test-domain-error-types flaky (James M Snell) #39369
- [5517769472] - **tools**: fetch googletest dependency for V8 CI (Michaël Zasso) #38990
- [5fe74aa403] - **tools**: update V8 gypfiles for 9.2 (Michaël Zasso) #38990
- [e58cf4e44c] - **tools**: flag README/mailmap mismatches in find-inactive-collaborators (Rich Trott) #39477
- [0a46e66253] - **tools**: use mailmap for find-inactive-collaborators (Rich Trott) #39432
- [7570f998df] - **tools**: email matchin is case insensitive for .mailmap (Rich Trott) #39430
- [5c11a0279d] - **tools**: make internal link checker more robust (Rich Trott) #39429
- [4c32aa02db] - **tools**: added remark-frontmatter (Ben Halverson) #38717
- [c6a7c3d00d] - **tools**: fix broken link hash (Rich Trott) #39426
- [0f1d51578e] - **tools**: change commit fetch limiting in find-inactive-collaborators (Rich Trott) #39362
- [e5d64473e8] - **tools**: use Node.js 16.x for GitHub workflow (Rich Trott) #39362
- [68fd6d5282] - **url**: prevent pathname setter from erasing path of path-only URLs (Darshan Sen) #39060

## 2021-07-14, Version 16.5.0 (Current), @targos

### Notable Changes

**Experimental Web Streams API** Node.js now exposes an experimental implementation of the Web Streams API.

While it is experimental, the API is not exposed on the global object and is only accessible using the new **stream/web** core module:

```
import { ReadableStream, WritableStream } from 'stream/web';
// Or from 'node:stream/web'
```

Importing the module will emit a single experimental warning per process.

The raw API is implemented and we are now working on its integration with various existing core APIs.

Contributed by James M Snell - #39062

## Other notable changes

- [83f3b959f9] - **(SEMVER-MINOR) fs**: allow empty string for temp directory prefix (Voltrex) #39028
- [c04fd2bb97] - **deps**: upgrade npm to 7.19.1 (npm team) #39225

## Commits

- [aafa08d7b9] - **bootstrap**: load perf\_hooks eagerly during bootstrap (Joyee Cheung) #38971
- [6e46eb186c] - **bootstrap**: support perf hooks in snapshot (Joyee Cheung) #38971
- [10681828ac] - **build**: update gcovr for gcc 8 compatibility (Richard Lau) #39326
- [8381132f76] - **build**: add riscv into host\_arch\_cc (Lu Yahan) #39004
- [a7ba21864d] - **build**: restore libplatform headers in distribution (Jeroen Ooms) #39288
- [41161eabf2] - **build**: remove unused comment in Makefile (LitoMore) #39171
- [f6a1092471] - **build**: allow to build riscv64 using Makefile (Makoto Kato) #39048
- [a7cd40ed8d] - **build**: uvwasi honours node\_shared\_libuv (Jérémy Lal) #39260
- [3ed04994b7] - **build**: shorten path used in tarball build workflow (Richard Lau) #39192
- [65b56b3774] - **build**: fix building with external builtins (Momtchil Momtchev) #39091
- [412b1012d2] - **build**: pass directory instead of list of files to js2c.py (Joyee Cheung) #39069
- [171ca6bb3c] - **build**: don't pass --mode argument to V8 test-runner (Richard Lau) #39055
- [cf8536ea3f] - **build**: fix commit linter on unrebased PRs (Mary Marchini) #39121
- [cf0533b8b2] - **build**: use Actions to validate commit message (Mary Marchini) #32417
- [4202274851] - **crypto**: move OPENSSL\_IS\_BORINGSSL guard (Shelley Vohr) #39136
- [89f5a73ba5] - **crypto**: use compatible ecdh function (Shelley Vohr) #39054
- [30e878b603] - **crypto**: add OPENSSL\_IS\_BORINGSSL guard (Shelley Vohr) #39138
- [630266cba2] - **debugger**: indicate server is ending (Rich Trott) #39334
- [48d9680f84] - **debugger**: remove final lint exceptions in inspect\_repl.js (Rich Trott) #39078
- [4507714f9d] - **deps**: V8: backport 5c76da8ddcf8 (Michaël Zasso) #39337
- [0e64bd0dd6] - **deps**: V8: cherry-pick 359d44df4cdd (Michaël Zasso)

- #39337
- [142ce6838b] - **deps:** V8: cherry-pick 3805a698f7b6 (Michaël Zasso) #39337
- [2657c305cb] - **deps:** V8: cherry-pick 56fe020eec0c (Michaël Zasso) #39337
- [5c5a93e533] - **deps:** V8: cherry-pick 2b77ca200c56 (Michaël Zasso) #39337
- [cf49ebb052] - **deps:** V8: cherry-pick 53784bdb8f01 (Michaël Zasso) #39337
- [3d351b29c1] - **deps:** V8: cherry-pick cb4faa902e9f (Michaël Zasso) #39337
- [165130a3e0] - **deps:** patch V8 to 9.1.269.38 (Michaël Zasso) #39196
- [c04fd2bb97] - **deps:** upgrade npm to 7.19.1 (npm team) #39225
- [bf4c50f9d9] - **deps:** upgrade npm to 7.19.0 (npm team) #39148
- [8630b39376] - **deps:** update Acorn to v8.4.1 (Michaël Zasso) #39166
- [38ae4077c7] - **doc:** fix typos in Web Streams API documentation (Tobias Nießen) #39351
- [fb6616ecbb] - **doc:** add text about moving long commit lists out of PR description (Danielle Adams) #39186
- [29c9cc8f03] - **doc:** do not use & for “and” in text (Rich Trott) #39345
- [0b3b2695bc] - **doc:** do not use tilde for “about” or “approximately” (Rich Trott) #39344
- [64a185e595] - **doc:** use consistent abbreviation formatting (Rich Trott) #39343
- [2573bf5116] - **doc:** update AUTHORS (Rich Trott) #39277
- [63b6084724] - **doc:** put information about the past in details tags (Rich Trott) #39321
- [e26635085a] - **doc:** replace outdated `util.promisify` timer examples with references (foxyxyz) #39164
- [d101a85e36] - **doc:** move AndreasMadsen to emeritus (Rich Trott) #39315
- [2d552a32d6] - **doc:** move ofrobots to collaborator emeritus (Rich Trott) #39307
- [131d676f64] - **doc:** simplify CRAN mirror text in benchmark guide (Rich Trott) #39287
- [c92b80e631] - **doc:** use “repository” instead of “repo” in onboarding.md (Rich Trott) #39286
- [81df9b1e92] - **doc:** update collaborator email address (Rich Trott) #39263
- [b8860f35c9] - **doc:** remove GitHub mark (Rich Trott) #39251
- [f06ebf1775] - **doc:** remove emailing the TSC from offboarding doc (Rich Trott) #39280
- [175a6569f4] - **doc:** add annotation to `writeFile` `data` as `Object` (Jacob Smith) #39167
- [4d53c63c22] - **doc:** fix boldface punctuation for full sentences (Rich Trott) #39278

- [146f733f43] - **doc:** fix constants usage in fs.access example (Cyrille Bourgois) #39289
- [eacee0ab17] - **doc:** use “repository” in guides versus repo (Michael Dawson) #39198
- [04bcfcfff1] - **doc:** update Node-api version matrix (Michael Dawson) #39197
- [4dd6ab389a] - **doc:** remove onboarding-extras (Rich Trott) #39252
- [a01dacfdcd] - **doc:** move Sam Ruby to emeritus (Rich Trott) #39264
- [2bb3713b74] - **doc:** update AUTHORS file (Rich Trott) #39250
- [2227c1368f] - **doc:** fix color contrast for anchor marks in dark mode (Rich Trott) #39168
- [f8cdaad9d4] - **doc:** rename datatypes to data types (FrankEntriken) #39209
- [250024eae] - **doc:** normalize CSS variable names and indentation (Rich Trott) #39199
- [db74a35348] - **doc:** remove unnecessary module format comments (Rich Trott) #39219
- [24a1f7ec84] - **doc:** use more consistent formatting for deprecations (Rich Trott) #39218
- [24c0d7d872] - **doc:** update AUTHORS (Rich Trott) #39217
- [3e5ed72b0a] - **doc:** use “pull request” instead of “PR” in packages.md (Rich Trott) #39213
- [ddc24b2105] - **doc:** move v8.stopCoverage() to expected location in doc (Rich Trott) #39212
- [68c334c8c9] - **doc:** move vm.measureMemory() to expected location in doc (Rich Trott) #39211
- [81d52d7c79] - **doc:** fix CHANGELOG.md formatting (Richard Lau) #39223
- [9c3a5fd53e] - **doc:** add cc oss-security@lists.openwall.com (Daniel Bevenius) #39191
- [07ba2875ae] - **doc:** remove instructions for unsupported Node.js versions (Rich Trott) #39185
- [482851f647] - **doc:** remove obsolete cc recommendations (Rich Trott) #39181
- [8311b29083] - **doc:** use “repository” in maintaining-V8 doc (Rich Trott) #39179
- [952580e1bf] - **doc:** fix broken link in errors.md (Rich Trott) #39200
- [af1e1dba36] - **doc:** correct JavaScript primitive value names in n-api.md (legendecas) #39129
- [00728d1301] - **doc:** apply logical ordering to CSS variables (Rich Trott) #39169
- [aec2744e14] - **doc:** remove file name from self-reference links (Antoine du Hamel) #39165
- [74bb915178] - **doc:** use repository instead of repo (Rich Trott) #39157
- [a669a191a1] - **doc:** use ASCII order for md refs (Antoine du Hamel) #39170

- [21e8720155] - **doc**: fix `EventTarget.dispatchEvent` docs (Rohan Sharma) #39127
- [90ec7660bc] - **doc**: update AUTHORS file (Rich Trott) #39082
- [81cebec5cc] - **doc**: esm examples /w imports for process, Buffer (Guy Bedford) #39043
- [c1588887a6] - **doc**: fix `napi_default_property` name (Davidson Francis) #39104
- [a440f6c69c] - **doc**: fix dead links in packages.md (Michaël Zasso) #39113
- [33cad271c5] - **errors**: remove eager stack generation for node errors (Gus Caplan) #39182
- [ac05a0a8a3] - **errors**: don't throw `TypeError` on missing export (Benjamin Coe) #39017
- [83f3b959f9] - **(SEMVER-MINOR) fs**: allow empty string for temp directory prefix (Voltrex) #39028
- [ac7184d8c7] - **http**: clean up `HttpParser` correctly (Tobias Koppers) #39292
- [35331cbd13] - **http,https**: align server option of https with http (Qingyu Deng) #38992
- [29194d4f88] - **inspector**: move inspector async hooks to environment (Joyee Cheung) #39112
- [ecf627a9af] - **lib**: rename `TransferredReadableStream` etc (Tobias Nießen) #39352
- [0e55cb72df] - **lib**: make `lazyDOMException` more common (Khaidi Chu) #39105
- [cfd96aa8f9] - **meta**: fix tls code owners (Robert Nagy) #39355
- [e5c2d80560] - **meta**: use form schema for bug report template (Michaël Zasso) #39194
- [bd472daf0c] - **meta**: add @nodejs/actions as CODEOWNERS (Mary Marchini) #39119
- [63f87027e3] - **node-api**: cctest on `v8impl::Reference` (legendecas) #38970
- [7ea98fbccd] - **perf\_hooks**: refactor `perf_hooks` for snapshot building (Joyee Cheung) #38971
- [20cc8ec2af] - **readline**: allow completer to rewrite existing input (Anna Henningsen) #39178
- [b168ec2a2a] - **repl**: `processTopLevelAwait` fallback error handling (ejose19) #39290
- [a101fe68ad] - **repl**: correctly hoist top level await declarations (ejose19) #39265
- [d441d91450] - **repl**: ensure correct syntax err for await parsing (Guy Bedford) #39154
- [9184259a54] - **src**: add JSDoc typings for v8 (Voltrex) #38944
- [66553feeba] - **src**: compare IPv4 addresses in host byte order (Colin Ihrig) #39096
- [ea8d83bf59] - **src,crypto**: fix 0-length output crash in `webcrypto` (Khaidi Chu) #38913
- [683c995001] - **src,zlib**: tighten up `Z_*_WINDOWBITS` macros (Khaidi



- Chu) #39115
- [cb32f69e00] - **stream**: cleanup async handling (Robert Nagy) #39329
  - [1fc6382942] - **stream**: don't emit prefinish after error or close (Robert Nagy) #39332
  - [35b6669e13] - **stream**: use finished for pump (Robert Nagy) #39203
  - [9af62a1357] - (**SEMVER-MINOR**) **stream**: implement WHATWG streams (James M Snell) #39062
  - [0bb980aeaf] - **test**: remove eslint-disable comment from fixture file (Rich Trott) #39320
  - [21f77031fb] - **test**: move debugger test case to parallel (Rich Trott) #39300
  - [0ec93a1fc1] - **test**: use common.PORT instead of hardcoded port number (Rich Trott) #39298
  - [11a8b81caf] - **test**: remove debugger workaround for AIX (Rich Trott) #39296
  - [8e77aa23f1] - **test**: add test for debugger restart message issue (Rich Trott) #39273
  - [13755599e1] - **test**: remove workaround code in debugger test (Rich Trott) #39238
  - [1f31e3c774] - **test**: remove checks for armv6 (Rich Trott) #39162
  - [d486d0117c] - **test**: move test-debugger-address to parallel (Rich Trott) #39236
  - [cdc7a19f48] - **test**: remove common.enoughTestCpu (Rich Trott) #39161
  - [cc32365f56] - (**SEMVER-MINOR**) **test**: add WPT streams tests (James M Snell) #39062
  - [fff21a4afb] - **test**: replace “inspector-cli” with “debugger” (Rich Trott) #39156
  - [df17c62818] - **test**: use localhost test instead of connecting to remote (Adam Majer) #39011
  - [dfe99d2aac] - **tls**: move legacy code into own file (Robert Nagy) #39333
  - [f338fddbb0] - **tools**: add GitHub Action to run find-inactive-collaborators.mjs (Rich Trott) #39335
  - [b3a0dd1e4a] - **tools**: pass bot token to node-pr-labeler (Michaël Zasso) #39271
  - [b56a3d9009] - **tools**: update gyp-next to v0.9.3 (Jiawen Geng) #39291
  - [3cd9f5e298] - **tools**: add find-inactive-collaborators.js (Rich Trott) #39262
  - [0673ede3ad] - **tools**: take ownership of deps/v8/tools/node (Michaël Zasso) #39222
  - [cb8c6ffbbe] - **tools**: update ESLint to 7.30.0 (Colin Ihrig) #39242
  - [d5113f9e34] - **tools**: remove armv6 from test tools (Rich Trott) #39162
  - [802d9c4488] - **tools**: update path-parse to 1.0.7 (Rich Trott) #39232
  - [ab9ccd014c] - **tools**: remove unused lint-pr-commit-message.sh (Richard Lau) #39120
  - [6200f3b35f] - **tools**: update @babel/eslint-parser to 7.14.7 (Rich Trott) #39160

- [dfe5d1139c] - **tools**: update remark-preset-lint-node to 2.4.1 (Rich Trott) #39201
- [4715105581] - **tools**: upgrade `highlight.js` to version 11.0.1 (Antoine du Hamel) #39032
- [2481ddd08d] - **tools,doc**: fix error message for unrecognized type (Antoine du Hamel) #39221
- [adb812c042] - **typings**: add a few JSDoc typings for the net lib module (nerdthatnoonelikes) #38953
- [29673b8ac8] - **typings**: add JSDoc typings for timers (Voltrex) #38834
- [fe1c81f247] - **wasi**: use missing validator (Voltrex) #39070

## 2021-07-05, Version 16.4.2 (Current), @BethGriggs

### Notable Changes

Node.js 16.4.1 introduced a regression in the Windows installer on non-English locales that is being fixed in this release. There is no need to download this release if you are not using the Windows installer.

### Commits

- [76e709ec63] - **win,msi**: use localized “Authenticated Users” name (Richard Lau) #39241

## 2021-07-01, Version 16.4.1 (Current), @BethGriggs

This is a security release.

### Notable Changes

Vulnerabilities fixed:

- **CVE-2021-22918**: libuv upgrade - Out of bounds read (Medium)
  - Node.js is vulnerable to out-of-bounds read in libuv’s `uv__idna_toascii()` function which is used to convert strings to ASCII. This is called by Node’s `dns` module’s `lookup()` function and can lead to information disclosures or crashes. You can read more about it in <https://cve.mitre.org/cgi-bin/cvename.cgi?name=CVE-2021-22918>
- **CVE-2021-22921**: Windows installer - Node Installer Local Privilege Escalation (Medium)
  - Node.js is vulnerable to local privilege escalation attacks under certain conditions on Windows platforms. More specifically, improper configuration of permissions in the installation directory allows an attacker to perform two different escalation attacks: `PATH` and `DLL` hijacking. You can read more about it in <https://cve.mitre.org/cgi-bin/cvename.cgi?name=CVE-2021-22921>

## Commits

- [d33aead28b] - **deps:** uv: cherry-pick 99c29c9c2c9b (Ben Noordhuis) nodejs-private/node-private#267
- [2690907b81] - **win,msi:** set install directory permission (AkshayK) nodejs-private/node-private#269

## 2021-06-23, Version 16.4.0 (Current), @danielleadams

### Notable changes

- **async\_hooks:**
  - stabilize part of AsyncLocalStorage (Vladimir de Turckheim) #37675
- **deps:**
  - upgrade npm to 7.18.1 (npm team) #39065
  - update V8 to 9.1.269.36 (Michaël Zasso) #38273
- **dns:**
  - allow `--dns-result-order` to change default dns verbatim (Ouyang Yadong) #38099

## Commits

- [d2b972ee52] - **async\_hooks:** check for empty contexts before removing (Bryan English) #39095
- [03e75fda4c] - **async\_hooks:** switch between native and context hooks correctly (Stephen Belanger) #38912
- [8115e6ee6d] - **(SEMVER-MINOR) async\_hooks:** stabilize part of AsyncLocalStorage (Vladimir de Turckheim) #37675
- [5f51729014] - **bootstrap:** move event loop handle checking into snapshot builder (Joyee Cheung) #39007
- [9d100aa269] - **bootstrap:** split NodeMainInstance::Run() (Joyee Cheung) #39007
- [2aaf2f231f] - **build:** reconfigure when gyp files change on Windows (Joyee Cheung) #39066
- [7f225a05ee] - **Revert “build:** work around bug in MSBuild v16.10.0” (Michaël Zasso) #38977
- [1853127dde] - **build:** reset embedder string to “-node.0” (Michaël Zasso) #38273
- [c0d236f5ea] - **build:** make build-addons errors fail the build (Richard Lau) #38983
- [173292bcf8] - **build:** fix commit-queue default branch (Mary Marchini) #38998
- [e939e243bf] - **build:** don’t pass python override to V8 build (Richard Lau) #38969
- [651c58b412] - **build:** correct Xcode spelling in .gitignore (bl-ue) #38895
- [5203c9ced7] - **build:** fast-track npm PRs and dont-land them on LTS (Michaël Zasso) #38885

- [7de57d4d33] - **build**: dont-land gyp-next PRs on LTS branches (Michaël Zasso) #38887
- [e87cd4542b] - **child\_process**: refactor to use `validateBoolean` (Qingyu Deng) #38927
- [69fa9e16e9] - **(SEMVER-MINOR) child\_process**: allow `options.cwd` receive a URL (Khaidi Chu) #38862
- [cf9d686c35] - **crypto**: fix aes crash when tag length too small (Khaidi Chu) #38914
- [1799ea36f0] - **crypto**: use compatible version of `EVP_CIPHER_name` (Shelley Vohr) #38925
- [6d5dc63ae4] - **crypto**: fix label cast in `EVP_PKEY_CTX_set0_rsa_oaep_label` (Shelley Vohr) #38926
- [6e93c17bf5] - **crypto**: use `EVP_get_cipherbynid` directly (Shelley Vohr) #38901
- [82c293959e] - **crypto**: add missing `rand.h` include (Shelley Vohr) #38864
- [e4f802de9a] - **debugger**: rename internal library for clarity (Rich Trott) #39080
- [1e8bdab581] - **debugger**: use `ERR_DEBUGGER_STARTUP_ERROR` in `__inspect.js` (Rich Trott) #39024
- [b43cb69fbb] - **debugger**: use error codes in debugger REPL (Rich Trott) #39024
- [dc9218136b] - **debugger**: use `ERR_DEBUGGER_ERROR` in debugger client (Rich Trott) #39024
- [711916a271] - **debugger**: remove unnecessary boilerplate copyright comment (Rich Trott) #38952
- [0f65e41442] - **debugger**: reduce scope of eslint disable comment (Rich Trott) #38946
- [1fa724ec5a] - **deps**: upgrade npm to 7.18.1 (npm team) #39065
- [c6aa68598d] - **deps**: upgrade npm to 7.17.0 (npm team) #38999
- [864fe9910b] - **deps**: make V8 9.1 abi-compatible with 9.0 (Michaël Zasso) #38991
- [c93f3573eb] - **deps**: V8: cherry-pick fa4cb172cde2 (Michaël Zasso) #38273
- [3c6c28b0a1] - **deps**: V8: cherry-pick 4c074516397b (Michaël Zasso) #38273
- [3c37396d5c] - **deps**: V8: cherry-pick 5f4413194480 (Michaël Zasso) #38273
- [3433559a55] - **deps**: V8: cherry-pick 272445f10927 (Michaël Zasso) #38273
- [f56c78574e] - **deps**: V8: cherry-pick c0fcea0669b (Michaël Zasso) #38273
- [7197fcec93] - **deps**: V8: cherry-pick d59db06bf542 (Michaël Zasso) #38273
- [bf7aa9fef8] - **deps**: silence irrelevant V8 warnings (Michaël Zasso) #37587
- [eac377bc15] - **deps**: V8: backport aacffa1e003 (Michaël Zasso) #38273

- [1a7c8a12c1] - **deps:** fix V8 build issue with inline methods (Jiawen Geng) #35415
- [3c9a75522b] - **deps:** make v8.h compatible with VS2015 (Joao Reis) #32116
- [8ed258339a] - **deps:** V8: forward declaration of `Rtl*FunctionTable` (Refael Ackermann) #32116
- [4ef37c83a9] - **deps:** V8: patch register-arm64.h (Refael Ackermann) #32116
- [7c61c6ee25] - **deps:** V8: un-cherry-pick bd019bd (Refael Ackermann) #32116
- [e82ef4148e] - **(SEMVER-MINOR) deps:** update V8 to 9.1.269.36 (Michaël Zasso) #38273
- [70af146745] - **deps:** upgrade npm to 7.16.0 (npm team) #38920
- [a71df7630e] - **(SEMVER-MINOR) dns:** allow `--dns-result-order` to change default dns verbatim (Ouyang Yadong) #38099
- [dce256b210] - **doc:** remove references to deleted freenode channels (devs-nek) #39047
- [1afff98805] - **doc:** fix typos (bl-ue) #39049
- [858f66e691] - **doc:** add missing parameter types (Voltrex) #39013
- [ed91379186] - **doc:** clarify that http does chunked encoding itself (Mao Wtm) #28379
- [51561f390a] - **doc:** add missing changelog links (Antoine du Hamel) #39016
- [a19170eb9d] - **doc:** clarify that only one Python version is required to build (bl-ue) #38894
- [7b219992e0] - **doc:** fix markup for `aesImportParams` (Tobias Nießen) #38898
- [405b50cdba] - **doc:** use `await` in `filehandle.truncate()` snippet (RA80533) #38939
- [5218fe86d1] - **doc:** fixed typo in `process.md` (Derevianchenko Maksym) #38941
- [f903ad85f2] - **doc:** add missing semis after classes (Darshan Sen) #38931
- [0bdeeda3b5] - **doc:** update write callback documentation (Simone Busoli) #38959
- [7a7c0588ad] - **doc:** mark `util.inherits` as legacy (Voltrex) #38896
- [f6964dc506] - **doc:** clarify when `readable._read(...)` is called (Shaun Keys) #38726
- [3481b02e77] - **doc:** mark Node.js v15.x as EOL (Antoine du Hamel) #38891
- [17a9846920] - **doc:** fix `.mjs` syntax in `crypto.md` (himself65) #38882
- [8c7b2bab5f] - **doc,fs:** remove experimental status for WHATWG URL as path (Antoine du Hamel) #38870
- [eddde6c31a] - **errors:** don't rekey on primitive type (Benjamin Coe) #39025
- [3d7892ef39] - **errors:** add `ERR_DEBUGGER_STARTUP_ERROR` (Rich Trott) #39024

- [631856ea32] - **errors**: add ERR\_DEBUGGER\_ERROR (Rich Trott) #39024
- [336571fbdd] - **Revert** “**http**: make HEAD method to work with keep-alive” (Michaël Zasso) #38949
- [c2b4fbb0f] - **lib**: remove semicolon in preparation for babel/eslint-parser update (Rich Trott) #39094
- [f17dde81f3] - **lib**: make internal/options lazy (Joyee Cheung) #38993
- [551430514b] - **lib**: add JSDoc typings for child\_process (Voltrex) #38222
- [ded83350a0] - **lib**: make primordial Promise methods safe (Antoine du Hamel) #38650
- [637c1fa83c] - **lib**: refactor debuglog init (Antoine du Hamel) #38838
- [5b5e07a2cc] - **meta**: update label-pr-config (Michaël Zasso) #38950
- [92ed1c6cce] - **module**: fix legacy node specifier resolution to resolve "main" field (Antoine du Hamel) #38979
- [4174f139b6] - **net**: use missing validator (Voltrex) #38984
- [f7724ab342] - **node-api**: avoid crashing on passed-in null string (Gabriel Schulhof) #38923
- [ec3e5b4c15] - **node-api**: avoid SecondPassCallback crash (Michael Dawson) #38899
- [74f5e30d69] - **node-api**: rtn pending excep on napi\_new\_instance (legendecas) #38798
- [4c6193fea1] - **report**: generates report on threads with no isolates (legendecas) #38994
- [3c7a7d9ee4] - **(SEMVER-MINOR) src**: allow to negate boolean CLI flags (Michaël Zasso) #39023
- [284d9c6228] - **src**: cleanup uv\_fs\_t regardless of success or not (legendecas) #38996
- [902bb858d7] - **src**: refactor to use locale functions (Darshan Sen) #39014
- [10370c5e8a] - **src**: fix multiple AddLinkedBinding() calls (Anna Henningsen) #39012
- [ff8313c3a5] - **src**: throw error in LoadBuiltinModuleSource when reading fails (Joyee Cheung) #38904
- [9ba5518f08] - **src**: skip test\_fatal/test\_threads for Debug builds (Daniel Bevenius) #38805
- [06afb8df65] - **(SEMVER-MINOR) src**: make InitializeOncePerProcess more flexible (Shelley Vohr) #38888
- [db4b192113] - **src**: add not-weak DCHECK to PersistentToLocal::Strong (Anna Henningsen) #38875
- [08b2a4a138] - **src,test**: raise error for --enable-fips when no FIPS (Daniel Bevenius) #38859
- [5d92c09bbf] - **src,url**: separate some tables out of node\_url.cc (Khaidi Chu) #38988
- [c20e28e1a0] - **stream**: fix pipeline pump (Robert Nagy) #39006
- [7b026d8a72] - **test**: move inspector-cli tests to sequential (Rich Trott) #39079
- [a53911b166] - **test**: improve buffer coverage (Rongjian Zhang) #38538

- [5e9175f148] - **test**: fix name of variable in inspector-cli test (Tobias Nießen) #38869
- [bd924610ec] - **test**: fix typo (Houssem Chebab) #39045
- [d50df5dec1] - **test**: fix typo in test-http2-invalidheaderfield.js (Ikko Ashimine) #39021
- [6111671d45] - **test**: adapt abort tests for new Windows code (Michaël Zasso) #38273
- [1816d46cef] - **test**: adapt test-linux-perf to V8 changes (Michaël Zasso) #38273
- [32961c4781] - **test**: fix V8 serdes test for V8 9.1 (Michaël Zasso) #38273
- [f652284b3b] - **test**: remove obsolete TLS test (Rich Trott) #39001
- [81bbeab3bd] - **test**: improve coverage of lib/events.js (Rongjian Zhang) #38582
- [e82111f890] - **test**: http outgoing \_headers setter null (ycjcl868) #38881
- [1f10e84939] - **test**: suppress warning in test\_environment.cc (Daniel Bevenius) #38868
- [379b5f79a9] - **tls**: tweak clientCertEngine argument parsing (Shelley Vohr) #38900
- [78d2e0ed8e] - **tools**: update babel-eslint-parser to 7.14.5 (Rich Trott) #39094
- [fed641127a] - **tools**: update ESLint to 7.29.0 (Rich Trott) #39083
- [3ae2a0be48] - **tools**: fix typo (Houssem Chebab) #39044
- [a1d0aef60e] - **tools**: update doctool dependencies, migrate to ESM (Michaël Zasso) #38966
- [2a292cf574] - **tools**: update V8 gypfiles for 9.1 (Michaël Zasso) #38273
- [0c90fd8454] - **tools**: avoid crashing CQ when git push fails (Antoine du Hamel) #36861
- [f817c2d3bb] - **tools**: fix typo in commit-queue.sh (bl-ue) #39000
- [be5101eb32] - **tools**: update ESLint to 7.28.0 (Luigi Pinca) #38955
- [9bf9ddb490] - **tools**: refactor snapshot builder (Joyee Cheung) #38902
- [0706565097] - **tools**: bump remark-preset-lint-node to 2.3.0 (Rich Trott) #38910
- [7d35fa7938] - **tools**: update gyp-next to v0.9.1 (Jiawen Geng) #38867
- [00c20e621f] - **tools,doc**: forbid CJS globals in ESM code snippets (Antoine du Hamel) #38889
- [99161b09f6] - **url,src**: simplify ipv6 logic by using uv\_inet\_pton (Khaidi Chu) #38842
- [f40725f2a1] - **vm**: use missing validator (Voltrex) #38935
- [f959cb3c68] - **worker**: do not look up context twice in PostMessage (Anna Henningsen) #38784

**2021-06-02, Version 16.3.0 (Current), @danielleadams**

#### Notable Changes

- **cli**:

- add -C alias for –conditions flag (Guy Bedford) #38755
- **deps:**
  - add workspaces support to npm install commands (Ruy Adorno) #38750

## Commits

- [4e58ec4aa6] - **benchmark:** output JSON-compatible numbers (Michaël Zasso) #38778
- [7a9d0fd5a9] - **benchmark:** fix http elapsed time (Antoine du Hamel) #38743
- [a98d631905] - **bootstrap:** include vm and contextify binding into the snapshot (Joyee Cheung) #38677
- [f1628960e1] - **build:** remove outdated dont-land-on-v6.x label (Michaël Zasso) #38886
- [6986154b30] - **build:** work around bug in MSBuild v16.10.0 (Michaël Zasso) #38873
- [24cca7c5ea] - **build:** add lto build to CI (Jiawen Geng) #38567
- [80c32b7a9a] - **build:** allow LTO with Clang 3.9.1+ (Jesse Chan) #38751
- [e9be2095cf] - **build:** replace non-POSIX test -a|o (Issam E. Maghni) #38731
- [717a8b63e1] - **child\_process:** retain reference to data with advanced serialization (Anna Henningsen) #38728
- [bc8400122c] - **(SEMVER-MINOR) cli:** add -C alias for –conditions flag (Guy Bedford) #38755
- [eb7c932a6d] - **debugger:** revise async iterator usage to comply with lint rules (Rich Trott) #38847
- [f1000e0e52] - **debugger:** removed unused function argument (Rich Trott) #38850
- [ee1056da60] - **debugger:** wait for V8 debugger to be enabled (Michaël Zasso) #38811
- [47ad448def] - **deps:** upgrade npm to 7.15.1 (npm team) #38880
- [e8192b5e89] - **deps:** upgrade npm to 7.14.0 (Ruy Adorno) #38750
- [15aaf14690] - **deps:** update llhttp to 6.0.2 (Fedor Indutny) #38665
- [108ffdb68f] - **doc:** fixed typo in n-api.md (julianjany) #38822
- [131a6918dd] - **doc:** use “Long Term Support” in collaborator guide (Rich Trott) #38841
- [4844337cd7] - **doc:** use “Long Term Support” in technical values doc (Rich Trott) #38841
- [f1e823b679] - **doc:** use “Long Term Support” in README (Philip) #38839
- [4e11971a76] - **doc:** fix grammar in fs.md (yotamselementor) #38818
- [e2f28c80d1] - **doc:** fixup code sample in http.md (TodorTotev) #38776
- [96fa387082] - **doc:** document null target pattern (Guy Bedford) #38724
- [5553be3f4e] - **doc:** update code examples for node:url module (fisker Cheung) #38645



- [0c063a1258] - **doc,url**: clarify domainTo\* when built without ICU (Darshan Sen) #38789
- [2054efa02c] - **events**: refactor to use primordials in lib/events (Akhil Marsonya) #38117
- [4884991a12] - **lib**: include url in bootstrap snapshot and remove unnecessary lazy-loads (Joyee Cheung) #38826
- [08ad2f6c18] - **lib**: fix typos (bl-ue) #38846
- [7d3a8cb854] - **lib**: remove unnecessary lazy loads (Joyee Cheung) #38737
- [5d9442a024] - **lib**: load internal/fs/watchers and internal/fs/read\_file\_context early (Joyee Cheung) #38737
- [2268d1cf4c] - **lib**: refactor to reuse validators (Rongjian Zhang) #38608
- [496f7eae92] - **node-api**: fix shutdown crashes (Michael Dawson) #38492
- [e1195312b9] - **(SEMVER-MINOR) os**: add os.devNull (Luigi Pinca) #38569
- [7ba305552f] - **src**: set PromiseHooks by Environment (Bryan English) #38821
- [74205b3542] - **src**: replace autos in node\_api.cc (Khaidi Chu) #38852
- [120849f609] - **src**: cache necessary isolate & context in api/\* (Khaidi Chu) #38366
- [f25cd4f377] - **src**: fix typos (bl-ue) #38845
- [a1b0e64187] - **src**: support fs\_event\_wrap binding in the snapshot (Joyee Cheung) #38737
- [36d4a4331d] - **src**: remove redundant v8 namespaces in env.cc (Juan José Arboleda) #38792
- [3e6b3b22c5] - **src**: use SPrintf in ProcessEmitWarning (Darshan Sen) #38758
- [9ca5c0e29e] - **src**: fix compiler warnings in node\_buffer.cc (Darshan Sen) #38722
- [3741595289] - **src**: set CONF\_MFLAGS\_DEFAULT\_SECTION for OpenSSL 3 (Daniel Bevenius) #38732
- [4e3353223e] - **src**: use HandleScope in StreamReq::Done() (Darshan Sen) #38720
- [c576311954] - **src**: remove commented code in node\_file.cc (Juan José Arboleda) #38693
- [61c95f08b3] - **src**: write named pipe info in diagnostic report (legendecas) #38637
- [ba96f14233] - **src**: remove unused iostream library (Juan José Arboleda) #38694
- [f5dd85bbe6] - **src**: remove more extra semis from member fns (Shelley Vohr) #38744
- [a47fd67154] - **src**: replace autos in node\_contextify.cc (Khaidi Chu) #38644
- [9054d25acc] - **stream**: add a non-destroying iterator to Readable (Nitzan Uziely) #38526
- [4131f94ca8] - **stream**: allow empty string as source of pipeline (Qingyu Deng) #38723

- [0aa3cb5c0e] - **test**: improve coverage of fs internal utils (Rongjian Zhang) #38746
- [48ebdbd2a8] - **test**: remove unnecessary `--pending-deprecation` flag (Antoine du Hamel) #38819
- [3c492baa51] - **test**: fix writefile with fd (Nitzan Uziely) #38820
- [e91d14c57c] - **test**: simplify test-path-resolve.js (himself65) #38671
- [1f5baaa2e7] - **test**: improve coverage for `question` in readline (Qingyu Deng) #38799
- [6d86f8afd5] - **test**: os, replace custom flatten method with built-in `Array.flat` (Wael Almattar) #38770
- [c7a58578dc] - **test**: set locale for `datetime-change-notify` test (ZiJian Liu) #38741
- [695e982a42] - **test**: improve coverage of lib/fs.js (Rongjian Zhang) #38604
- [11ac9c6fcc] - **test**: improve coverage of lib/\_http\_outgoing.js (Rongjian Zhang) #38734
- [6da4aa30c6] - **test**: give js-native-api tests consistent names (Gabriel Schulhof) #38692
- [929e8df1c0] - **test**: improve coverage of stream.Readable (Rongjian Zhang) #38702
- [36ffd58105] - **tools**: refloat 7 Node.js patches to cpplint.py (Rich Trott) #38851
- [6b8c712247] - **tools**: bump cpplint to 1.5.5 (Rich Trott) #38851
- [be8d934679] - **tools**: remove exception for Node.js 8 and earlier (Rich Trott) #38840
- [c0bde0cd4a] - **tools**: update setup-node to setup-node@v2 (pengjie) #38825
- [21ce3af904] - **tools**: update ESLint to 7.27.0 (Luigi Pinca) #38764
- [ab44106555] - **tools**: use `PrintCaughtException` in the snapshot builder (Joyee Cheung) #38745
- [30c0020885] - **typings**: add JSDoc typings for `https` (Voltrex) #38589
- [7fb809b475] - **typings**: add JSDoc typings for `events` (Voltrex) #38712
- [7773d58f1a] - **url**: exit early when `:` delimiter is seen in `hostname` (Timothy Gu) #38742
- [a2da9e254c] - **worker**: use `rwlock` for sibling group (Anna Henningsen) #38783
- [18f3ba3674] - **worker**: leave TODO comments for using `std::variant` when possible (Anna Henningsen) #38788

## 2021-05-19, Version 16.2.0 (Current), @targos

### Notable Changes

- [36b948560c] - **(SEMVER-MINOR) async\_hooks**: use new `v8::Context PromiseHook` API (Stephen Belanger) #36394
- [c0deeeacb2] - **lib**: support setting `process.env.TZ` on windows (James M

- Snell) #38642
- [4c4902748c] - **(SEMVER-MINOR) module**: add support for URL to `import.meta.resolve` (Antoine du Hamel) #38587
- [c182198c44] - **(SEMVER-MINOR) process**: add `'worker'` event (James M Snell) #38659
- [fbf02e3198] - **(SEMVER-MINOR) util**: add `util.types.isKeyObject` and `util.types.isCryptoKey` (Filip Skokan) #38619

## Commits

- [36b948560c] - **(SEMVER-MINOR) async\_hooks**: use new `v8::Context PromiseHook` API (Stephen Belanger) #36394
- [dcae03203e] - **buffer**: remove TODOs in `atob` / `btoa` (Khaidi Chu) #38548
- [48b557e904] - **buffer**: remove unreachable code (Rongjian Zhang) #38537
- [b0df28dea5] - **build**: add workaround for V8 builds (Richard Lau) #38632
- [3bb12db255] - **build**: remove dependency on `distutils.spawn` (Richard Lau) #38600
- [10aaf30da1] - **build**: add missing torque output sources (Richard Lau) #38576
- [03b4a3a5bf] - **build**: compile with `-std=gnu++14` (Darshan Sen) #38504
- [4296591154] - **build,src,test,doc**: enable FIPS for OpenSSL 3.0 (Daniel Bevenius) #38633
- [36bb8daba5] - **crypto**: forbid NODE-ED25519 and NODE-ED448 “raw” key export (Filip Skokan) #38668
- [36bb7243ff] - **debugger**: refactor `inspect_repl` to use `primordials` (Antoine du Hamel) #38551
- [16a6c8d5a6] - **debugger**: refactor to use internal modules (Antoine du Hamel) #38550
- [11dd9a6838] - **debugger**: disable only the lint rules required by current file state (Rich Trott) #38529
- [e79f540fa0] - **debugger**: avoid non-ASCII char in code file (Rich Trott) #38529
- [d9867b9358] - **debugger**: wrap lines longer than 80 chars (Rich Trott) #38529
- [352a600142] - **debugger**: rename `inspector-cli` test module to `debugger` (Rich Trott) #38530
- [608d0e11f3] - **deps**: upgrade npm to 7.13.0 (Ruy Adorno) #38682
- [5c71f49d3f] - **deps**: upgrade npm to 7.12.1 (Ruy Adorno) #38628
- [ec2dbfb200] - **deps**: patch V8 to 9.0.257.25 (Michaël Zasso) #38556
- [ab298723b5] - **(SEMVER-MINOR) deps**: V8: cherry-pick `fa4cb172cde2` (Stephen Belanger) #36394
- [a84e9b3e7d] - **(SEMVER-MINOR) deps**: V8: cherry-pick `4c074516397b` (Stephen Belanger) #36394
- [043b1aaa3f] - **(SEMVER-MINOR) deps**: V8: cherry-pick `5f4413194480` (Stephen Belanger) #36394

- [1a104bac74] - **(SEMVER-MINOR) deps:** V8: cherry-pick 272445f10927 (Stephen Belanger) #36394
- [827ae05538] - **(SEMVER-MINOR) deps:** V8: backport c0fcea0669b (Stephen Belanger) #36394
- [f31a6114a4] - **deps:** V8: cherry-pick 530080c44af2 (Milad Fa) #38489
- [4001dd28ba] - **dgram:** extract cluster lazy loading method to make it testable (Rongjian Zhang) #38563
- [a0dc194e31] - **doc:** document buffer.kStringMaxLength (Tobias Nießen) #38688
- [8590c151cd] - **doc:** update abort signal in fs promise api example (Moritz Kneilmann) #38669
- [0100a3b026] - **doc:** add documentation for fs.WriteStream.close() (Hitesh Sharma) #38610
- [5c38a554ec] - **doc:** clarify synchronous blocking of Worker stdio (James M Snell) #38658
- [1765e32c45] - **doc:** update contact info (Gabriel Schulhof) #38689
- [c4b161cb89] - **doc:** change color of doctag on night mode (Qingyu Deng) #38652
- [6620a3182e] - **doc:** add ESM code examples in url.md (Antoine du Hamel) #38651
- [d3de0ef5d4] - **doc:** fix fs.openSync() signature (Luigi Pinca) #38591
- [56bf6c1bcd] - **doc:** typo stats() should be stat(); clarity (Bryan Field) #38541
- [1d9fd49f41] - **doc:** fix code example in ecdh.setPublicKey() (Jordan Baczuk) #38542
- [4c70e42928] - **doc:** use HEAD instead of master for links (Antoine du Hamel) #38518
- [ae9128ec61] - **doc:** clarify DiffieHellmanGroup class docs (Nitzan Uziely) #38363
- [e59131d97f] - **doc:** fix broken AHAFS link in fs doc (Rich Trott) #38534
- [e9d4c8587a] - **doc:** use AIX instead of Aix in fs.md (Rich Trott) #38535
- [e0118f347a] - **doc:** remove extraneous dash from flag prefix (Rodolfo Carvalho) #38532
- [9e10e1a76f] - **doc:** corrected workload name as per the latest VS Installer (MrJithil) #38500
- [38644d6f96] - **doc:** use sentence case in headers in src/crypto/README.md (Rich Trott) #38524
- [347b9f2304] - **errors:** remove input from ERR\_INVALID\_URL message (moander) #38614
- [5b40e2f596] - **events:** use nullish coalescing operator (Voltrex) #38328
- [3a5856cbc3] - **fs:** fix async iterator partial writes (Nitzan Uziely) #38615
- [e8761186a5] - **fs:** fix error when writing buffers > INT32\_MAX (Zach Bjornson) #38546
- [47080bcfc8] - **fs:** use assert in fsCall argument checking (Rongjian Zhang) #38519
- [3d8b8e133f] - **http:** refactor to remove redundant argument of \_deferTo

Connect (Rongjian Zhang) #38598

- [c0deeeacb2] - **lib**: support setting process.env.TZ on windows (James M Snell) #38642
- [cf4dc80d5f] - **lib**: make IterableWeakMap safe to iterate (Antoine du Hamel) #38523
- [90b640efb1] - **meta**: add v8 team (Jiawen Geng) #38566
- [4c4902748c] - **(SEMVER-MINOR) module**: add support for URL to import.meta.resolve (Antoine du Hamel) #38587
- [14a2a00cda] - **node-api**: faster threadsafe\_function (Fedor Indutny) #38506
- [be4b3a4164] - **path**: inline conditions (Vltrex) #38613
- [c182198c44] - **(SEMVER-MINOR) process**: add 'worker' event (James M Snell) #38659
- [e2b8454582] - **repl**: fix Ctrl+C on top level await (Antoine du Hamel) #38656
- [718ad105e5] - **src**: fix fatal errors when a current isolate not exist (legendecas) #38624
- [524a9d6fcd] - **src**: update cares\_wrap OpenBSD defines (Anna Henningsen) #38670
- [6b409cf664] - **src**: remove extra semi after member fn (Shelley Vohr) #38686
- [bfec80fd66] - **src**: make workers messaging more resilient (Juan José Arboleda) #38510
- [ff1b4322f5] - **test**: refactor test-readline-interface to be shorter (Juan José Arboleda) #38691
- [8eea317227] - **test**: stream.finished detects a destroyed IncomingMessage (Nitzan Uziely) #38661
- [5b25f6be266] - **test**: set common.bits to 64 for riscv64 (Andreas Schwab) #38626
- [5a0b52120a] - **test**: improve coverage of lib/\_http\_client.js (Rongjian Zhang) #38599
- [3d0fad3840] - **test**: improve coverage of lib/os.js (Rongjian Zhang) #38653
- [16b2fb4e0c] - **test**: increase coverage for repl (ZiJian Liu) #38559
- [8f78c6646e] - **test**: call functions internally (Vltrex) #38560
- [178fe215a4] - **test**: increase coverage for Histogram (ZiJian Liu) #38555
- [95db7d5afc] - **test**: improve fs coverage (Rongjian Zhang) #38517
- [f2f768f261] - **test**: complete coverage of querystring (Rongjian Zhang) #38520
- [5b44107ae9] - **test**: increase coverage for AbortController (ZiJian Liu) #38514
- [662265074c] - **test**: increase coverage for Blob (ZiJian Liu) #38515
- [89e1daccf3] - **test**: run message and pseudo-tty tests in parallel (Richard Lau) #38502
- [727c2bcc24] - **test**: move test-net-connect-econnrefused from pummel to sequential (Rich Trott) #38462

- [e64ebac2da] - **test**: fix flaky inspector-cli tests when breakpoints are restored (Rich Trott) #38431
- [b51b4feece] - **test**: skip tests for openssl-3.0.0-alpha15 (Daniel Bevenius) #38451
- [db5ee23edf] - **test**: update OpenSSL 3.0.0-alpha15 error messages (Daniel Bevenius) #38451
- [24472d9e0c] - **test,repr**: fix tests when inspector is disabled (Antoine du Hamel) #38564
- [267a84f5e1] - **tools**: remove redundant v8 config (Jiawen Geng) #38565
- [a028805f1b] - **tools**: update ESLint to 7.26.0 (Colin Ihrig) #38605
- [ec8ab22ce6] - (**SEMVER-MINOR**) **tools**: add `Worker` to type-parser (James M Snell) #38659
- [151488539b] - **tools**: make GH Actions workflows work if default branch is not master (Antoine du Hamel) #38516
- [c0f0c9a92d] - **typings**: add JSDoc typings for readline (Voltrex) #38253
- [fbf02e3198] - (**SEMVER-MINOR**) **util**: add `util.types.isKeyObject` and `util.types.isCryptoKey` (Filip Skokan) #38619
- [070ee4bb94] - **Revert** “**worker**: remove `ERR_CLOSED_MESSAGE_PORT`” (Juan José Arboleda) #38510

## 2021-05-04, Version 16.1.0 (Current), @targos

### Notable Changes

- [8a90f55a05] - (**SEMVER-MINOR**) **fs**: allow no-params `fsPromises.readFile` read (Nitzan Uziely) #38287

### Commits

- [28e16488cf] - **async\_hooks,doc**: replace `process.stdout.fd` with 1 (Darshan Sen) #38382
- [cbab7ec6e5] - **benchmark**: avoid using `console.log()` (Antoine du Hamel) #38370
- [ba15b20062] - **benchmark**: use `process.hrtime.bigint()` (Antoine du Hamel) #38369
- [bc6e719884] - **bootstrap**: freeze more intrinsics (Antoine du Hamel) #38217
- [29faf0f12e] - **build**: fix label-pr workflow (Michaël Zasso) #38399
- [b5d669a6ea] - **build**: label PRs with GitHub Action instead of nodejs-github-bot (Phillip Johnsen) #38301
- [195f679331] - **crypto**: don't crash with some selfsigned certs (Nils Dralle) #37990
- [4b073b0beb] - **crypto**: fix `generateKeyPair` type checks (Nitzan Uziely) #38364
- [c1d9b5b386] - **crypto**: fix `scrypt` keylen validation (Antoine du Hamel) #38385

- [7354479ad5] - **crypto**: fix DiffieHellman **generator** validation (elad-keyshawn) #38311
- [0e446d6048] - **debugger**: enable linter on `internal/inspector/inspect_client` (Antoine du Hamel) #38417
- [9f0e80aa4d] - **debugger**: refactor `internal/inspector/_inspect` to use more `primordials` (Antoine du Hamel) #38406
- [a0c566f85a] - **debugger**: apply automatic lint fixes for `inspect_repl.js` (Rich Trott) #38411
- [b884ea739b] - **debugger**: apply automatic lint fixes for `_inspect.js` (Rich Trott) #38411
- [f946aa0360] - **debugger**: remove unused function argument (Rich Trott) #38400
- [203a9689a3] - **debugger**: align message with Node.js standard (Rich Trott) #38400
- [ef617dcbb0] - **debugger**: add usage example for `--port` (Rafael Gonzaga) #38400
- [37b5ce2d5a] - **debugger**: fix race condition/deadlock on initialization (Rich Trott) #38161
- [2a6203d155] - **debugger**: replace internal use of deprecated API (Rich Trott) #38161
- [6fff9fff97] - **debugger**: allow longer time to connect (Rich Trott) #38161
- [def85daace] - **debugger**: accommodate line chunking in Windows (Rich Trott) #38161
- [07361e6b77] - **debugger**: fix inspect restart on Windows (Rich Trott) #38161
- [d65615e119] - **debugger**: remove unused code (Rich Trott) #38161
- [62b03bc4f6] - **debugger**: move node-inspect to internal library (Rich Trott) #38161
- [e3b75cb5aa] - **deps**: V8: cherry-pick fd75c97d3f56 (Michaël Zasso) #38455
- [aabddfbeb5] - **deps**: upgrade npm to 7.11.2 (Ruy Adorno) #38475
- [7b9fb92d51] - **deps**: update to cjs-module-lexer@1.2.1 (Guy Bedford) #38450
- [47626c52a3] - **deps**: patch V8 to 9.0.257.24 (Michaël Zasso) #38423
- [f455e08621] - **deps**: patch V8 to 9.0.257.21 (Michaël Zasso) #38333
- [dd61a26d8c] - **deps**: update llhttp to 6.0.1 (Fedor Indutny) #38359
- [05f41cdbcc] - **deps**: patch V8 to 9.0.257.19 (Michaël Zasso) #38270
- [224faa0a05] - **Revert** “**doc**: os.uptime() temporary bug notice” (Michaël Zasso) #38494
- [3b0480dde8] - **doc**: document '`secureConnect`' event limitation (James M Snell) #38447
- [92586046ec] - **doc**: fix outdated util inspect documentation and layout example (Ruben Bridgewater) #37079
- [13de4cf1ca] - **doc**: mark Node.js 10 as End-of-Life (Richard Lau) #38482
- [3cbfde1f25] - **doc**: mark querystring api as legacy (James M Snell)

- #38436
- [a5929c2487] - **doc**: update node-api support matrix (Michael Dawson) #38424
- [f08650cefe] - **doc**: add arguments for stream event of Http2Server and Http2SecureServer (Qingyu Deng) #37892
- [2d59273bed] - **doc**: indicate that abort tests do not generate core files (Rich Trott) #38422
- [f1970127ee] - **doc**: add try/catch in http2 respondWithFile example (Matteo Collina) #38410
- [f6f1317f43] - **doc**: note the system requirements for V8 tests (DeeDeeG) #38319
- [4b19beaf3c] - **doc**: minor clarification to pathObject (James M Snell) #38437
- [1eae4af6f7] - **doc**: clarify that fs.Dir async iterator closes automatically (James M Snell) #38438
- [14afb39259] - **doc**: document new TCP\_KEEPCNT and TCP\_KEEPINTVL socket option defaults (Arnold Zokas) #38313
- [ed5ef21690] - **doc**: do not mention TCP in the allowHalfOpen option description (Luigi Pinca) #38360
- [042985c139] - **doc**: update message to match actual output (Rich Trott) #35271
- [bcc5e2af76] - **doc**: request default snap track be updated for LTS (Rod Vagg) #37708
- [dfd4c7ba93] - **doc**: mark `process.hrtime()` as legacy (Antoine du Hamel) #38371
- [67cd88da00] - **doc**: fix typo in worker\_threads.md (takayama) #38368
- [a9314cda7d] - **doc**: fix version history for "exports" patterns (Antoine du Hamel) #38355
- [76885cd578] - **doc**: fix `package.json` "imports" field history (Antoine du Hamel) #38356
- [0e88ae7ec1] - **doc**: fix typo in buffer.md (divlo) #38323
- [1cccc2da51] - **doc**: fix YAML comment opening tags (Jayden Seric) #38324
- [25052dc987] - **doc**: add nodejs-sec email template (Daniel Bevenius) #38290
- [3858029262] - **doc**: update TSC members list with three new members (Rich Trott) #38352
- [2eef587674] - **doc**: use `foo.prototype.bar` notation in buffer.md (Vltrex) #38032
- [8a90f55a05] - **(SEMVER-MINOR) fs**: allow no-params fsPromises fileHandle read (Nitzan Uziely) #38287
- [a696f1080c] - **inspector**: remove redundant method for connection check (Yash Ladha) #37986
- [fcac2e0363] - **lib**: harden lint checks for globals (Antoine du Hamel) #38419
- [277122e1fa] - **lib**: fix and improve os typings (Akhil Marsonya) #38316



- [f2c0258b4c] - **lib**: add support for JSTransferable as a mixin (James M Snell) #38383
- [96f54d3446] - **meta**: post comment when pr labeled fast-track (James M Snell) #38446
- [4711f57cf2] - **perf\_hooks**: add toJSON to performance class (Yash Ladha) #37771
- [013fa59602] - **perf\_hooks**: fix PerformanceObserver 'gc' crash (James M Snell) #38414
- [10147f191e] - **readline**: move utilities to internal modules (Antoine du Hamel) #38466
- [620ee42ab4] - **repl**: document top level await limitation with const/let (James M Snell) #38449
- [aa24681dcb] - **repl**: display prompt once after error callback (Anna Henningsen) #38314
- [9c06103a4f] - **src**: fix validation of negative offset to avoid abort (James M Snell) #38421
- [7d8cc2abf1] - **src**: use %progbits instead of @progbits (Stephen Gallagher) #38312
- [17856f1f88] - **src**: print arbitrary javascript exception value in node report (legendecas) #38009
- [769a210d55] - **src**: refactor to use THROW\_\* argument based snprintf (Filip Skokan) #38357
- [e3538bbcd2] - **src**: fix abort in pbkdf2 (Tobias Nießen) #38354
- [09cacd7418] - **src**: fix setting Converter sub char length (James M Snell) #38331
- [3649ec5276] - **src**: avoid deferred gc/cleanup for Buffer.from (James M Snell) #38337
- [f2ffaba78c] - **stream**: the position of \_read() is wrong (helloyou2012) #38292
- [7ce39b8608] - **test**: fix common.mustCall length and name properties (Antoine du Hamel) #38464
- [d1cd1178e7] - **test**: address deprecation warning (Rich Trott) #38448
- [67e9e71f75] - **test**: crypto.KeyObject.from() ERR\_INVALID\_ARG\_TYPE (pezhmanparsaei) #37890
- [9ad611c0b2] - **test**: fix flaky test-crypto-timing-safe-dual-benchmarks (Rich Trott) #38476
- [10b6b4e244] - **test**: update url Web Platform Tests (Leko) #38435
- [4f6c4eb144] - **test**: move abort test from pummel to abort directory (Rich Trott) #38396
- [231ef4b0ce] - **test**: move slower tests into pummel and skip on slow devices (Rich Trott) #38395
- [45322dfa12] - **test**: skip some pummel tests on slower machines (Rich Trott) #38394
- [1bc47a4c0f] - **test**: fix test to allow quicktls fork of OpenSSL 3 (Richard Lau) #38372
- [6ac02755f5] - **test**: extend timeout on debugger tests for slower machines

- (Rich Trott) #38161
- [93b0c78de0] - **test**: fix comment typo (Rich Trott) #38161
  - [6c3e5043b0] - **test**: fix test-inspector-cli-address (Rich Trott) #38161
  - [27d7588ad5] - **test**: add ancestor package.json checks for tmpdir (Richard Lau) #38285
  - [30de03630e] - **test**: replace function with arrow function and remove unused argument (Andres) #38235
  - [eb8f5ce44f] - **test**: use .test domain for not found address (Richard Lau) #38286
  - [a4084d66c6] - **test,debugger**: migrate node-inspect tests to core (Rich Trott) #38161
  - [16eb078aa8] - **test,readline**: improve tab completion coverage (Antoine du Hamel) #38465
  - [b3ca1b358e] - **timers**: remove redundant unref calls (Giora Guttsait) #38320
  - [5b393d9258] - **tls**: validate ticket keys buffer (Antoine du Hamel) #38308
  - [f6745e9370] - **tls**: fix `tlsSocket.setMaxSendFragment` abort (elad-keyshawn) #38170
  - [499da2d9e3] - **tools**: use mktemp to create the workspace directory (Luigi Pinca) #38432
  - [8a83bfd1bd] - **tools**: use a shallow clone of the npm/cli repository (Luigi Pinca) #38463
  - [bec959ef8b] - **tools**: disable LTO for “v8\_cppgc\_shared” target (Jesse Chan) #38346
  - [6350d35b3c] - **tools**: remove fixer for non-ascii-character ESLint custom rule (Rich Trott) #38413
  - [dce8d2968a] - **tools**: fix doc generation when version info is not available (Antoine du Hamel) #38398
  - [1033f6c8cb] - **tools**: add `_depot_tools` to PATH (for V8 tests) (DeeDeeG) #38299
  - [28f02cb8cf] - **tools**: update ESLint to 7.25.0 (Colin Ihrig) #38378
  - [f1ea2c8e2b] - **tools**: update markdown linter rules (Rich Trott) #38384
  - [02e875c645] - **tools**: remove node-inspect from license (Rich Trott) #38161
  - [d3bd4b4771] - **tools**: fix type mismatch in test runner (Richard Lau) #38289
  - [9a2651352b] - **typings**: add JSDoc typings for fs (Vltrex) #38306
  - [e389e86b6b] - **typings**: add JSDoc typings for util (Rohit Gohri) #38213
  - [ec5b06eae3] - **util**: fix infinite recursion during inspection (Ruben Bridge-water) #37079
  - [67bd0ec15c] - **zlib**: fix brotli flush range (Khaidi Chu) #38408

## 2021-04-20, Version 16.0.0 (Current), @BethGriggs

### Notable Changes

#### Deprecations and Removals

- **(SEMVER-MAJOR) fs:** remove permissive rmdir recursive (Antoine du Hamel) #37216
- **(SEMVER-MAJOR) fs:** runtime deprecate rmdir recursive option (Antoine du Hamel) #37302
- **(SEMVER-MAJOR) lib:** runtime deprecate access to `process.binding('http_parser')` (James M Snell) #37813
- **(SEMVER-MAJOR) lib:** runtime deprecate access to `process.binding('url')` (James M Snell) #37799
- **(SEMVER-MAJOR) lib:** make `process.binding('util')` return only type checkers (Anna Henningsen) #37819
- **(SEMVER-MAJOR) lib:** runtime deprecate access to `process.binding('crypto')` (James M Snell) #37790
- **(SEMVER-MAJOR) lib:** runtime deprecate access to `process.binding('signal_wrap')` (James M Snell) #37800
- **(SEMVER-MAJOR) lib:** runtime deprecate access to `process.binding('v8')` (James M Snell) #37789
- **(SEMVER-MAJOR) lib:** runtime deprecate access to `process.binding('async_wrap')` (James M Snell) #37576
- **(SEMVER-MAJOR) module:** remove `module.createRequireFromPath` (Antoine du Hamel) #37201
- **(SEMVER-MAJOR) module:** runtime deprecate subpath folder mappings (Antoine du Hamel) #37215
- **(SEMVER-MAJOR) module:** runtime deprecate “main” index and extension lookups (Antoine du Hamel) #37206
- **(SEMVER-MAJOR) module:** runtime deprecate invalid `package.json` main entries (Antoine du Hamel) #37204
- **(SEMVER-MAJOR) process:** runtime deprecate changing `process.config` (James M Snell) #36902

**Stable Timers Promises API** The Timers Promises API provides an alternative set of timer functions that return Promise objects. Added in Node.js v15.0.0, in this release they graduate from experimental status to stable.

Contributed by James Snell - #38112

**Toolchain and Compiler Upgrades** Node.js v16.0.0 will be the first release where we ship prebuilt binaries for Apple Silicon. While we'll be providing separate tarballs for the Intel (`darwin-x64`) and ARM (`darwin-arm64`) architectures the macOS installer (`.pkg`) will be shipped as a ‘fat’ (multi-architecture) binary.

- **(SEMVER-MAJOR) build:** remove support for Python 2 (Christian Clauss) #36691

- **(SEMVER-MAJOR) build:** default PYTHON to python3 in Makefile (Michaël Zasso) #37764
- **build:** update Makefile to support fat binary (Ash Cripps) #37861
- **(SEMVER-MAJOR) build:** enable ASLR (PIE) on OS X (woodfairy) #35704
- **build:** warn for gcc versions earlier than 8.3.0 (Richard Lau) #37935
- **(SEMVER-MAJOR) doc:** update minimum supported Xcode to 11 (Michaël Zasso) #37872
- **(SEMVER-MAJOR) doc:** update minimum supported GCC to 8.3 (Michaël Zasso) #37871
- **(SEMVER-MAJOR) doc:** update AIX to GCC8 for v16.x (Ash Cripps) #37677
- **tools:** set arch in Distribution.xml (Ash Cripps) #38261

**V8 9.0** The V8 JavaScript engine is updated to V8 9.0, including performance tweaks and improvements.

This update also brings the ECMAScript RegExp Match Indices, which provide the start and end indices of the captured string. The indices array is available via the `.indices` property on match objects when the regular expression has the `/d` flag.

Contributed by Michaël Zasso - #37587

### Other Notable Changes

- **(SEMVER-MINOR) assert:** graduate `assert.match` and `assert.doesNotMatch` (James M Snell) #38111
- **(SEMVER-MAJOR) buffer:** expose `btoa` and `atob` as globals (James M Snell) #37786
- **(SEMVER-MAJOR) deps:** bump minimum ICU version to 68 (Michaël Zasso) #37330
- **deps:** update ICU to 69.1 (Michaël Zasso) #38178
- **deps:** update `llhttp` to 6.0.0 (Fedor Indutny) #38277
- **deps:** upgrade `npm` to 7.10.0 (Ruy Adorno) #38254
- **(SEMVER-MINOR) http:** add `http.ClientRequest.getRawHeaderNames()` (simov) #37660
- **(SEMVER-MAJOR) http:** use `autoDestroy: true` in incoming message (Daniele Belardi) #33035
- **(SEMVER-MAJOR) lib,src:** update `cluster` to use `Parent` (Michael Dawson) #36478
- **(SEMVER-MINOR) module:** add support for `node:-`prefixed `require(...)` calls (ExE Boss) #37246
- **(SEMVER-MINOR) perf\_hooks:** add histogram option to `timerify` (James M Snell) #37475
- **(SEMVER-MINOR) repl:** add auto-completion for `node:-`prefixed `require(...)` calls (ExE Boss) #37246

- **(SEMVER-MINOR) util:** add `getSystemErrorMap()` impl (elad-keyshawn) #38101

### Semver-Major Commits

- [324a6c235a] - **(SEMVER-MAJOR) async\_hooks:** add `thisArg` to `AsyncResource.bind` (James M Snell) #36782
- [d1e2184c8e] - **(SEMVER-MAJOR) buffer:** expose `btoa` and `atob` as globals (James M Snell) #37786
- [4268fae04a] - **(SEMVER-MAJOR) build:** remove support for Python 2 (Christian Clauss) #36691
- [c3a5e15ebe] - **(SEMVER-MAJOR) build:** default `PYTHON` to `python3` in `Makefile` (Michaël Zasso) #37764
- [1d8c022544] - **(SEMVER-MAJOR) build:** update `Makefile` to support fat binary (Ash Cripps) #37861
- [38f32386c1] - **(SEMVER-MAJOR) build:** include minimal V8 headers in distribution (Michaël Zasso) #37570
- [a19af5ee71] - **(SEMVER-MAJOR) build:** use C++11 ABI with `libstdc++` (Anna Henningsen) #36634
- [8d6b74d347] - **(SEMVER-MAJOR) build:** enable ASLR (PIE) on OS X (woodfairy) #35704
- [732ad99e47] - **(SEMVER-MAJOR) deps:** update V8 to 9.0.257.11 (Michaël Zasso) #37587
- [43cc8e4b2e] - **(SEMVER-MAJOR) deps:** bump minimum ICU version to 68 (Michaël Zasso) #37330
- [c5ff019a4e] - **(SEMVER-MAJOR) deps:** update V8 to 8.9.255.19 (Michaël Zasso) #37330
- [c7b3292251] - **(SEMVER-MAJOR) deps:** update V8 to 8.8.278.17 (Michaël Zasso) #36139
- [48db20f6f5] - **(SEMVER-MAJOR) deps:** update V8 to 8.7.220 (Michaël Zasso) #35700
- [d85e1f0703] - **(SEMVER-MAJOR) dns:** use `url` module instead of `punycode` for IDNA (Antoine du Hamel) #35091
- [290c158018] - **(SEMVER-MAJOR) doc:** update minimum supported Xcode to 11 (Michaël Zasso) #37872
- [1ff2918d80] - **(SEMVER-MAJOR) doc:** update minimum supported GCC to 8.3 (Michaël Zasso) #37871
- [2706e67116] - **(SEMVER-MAJOR) doc:** update AIX to GCC8 for v16.x (Ash Cripps) #37677
- [5ae5ca90ef] - **(SEMVER-MAJOR) doc:** add `http.IncomingMessage#connection` (Pranshu Srivastava) #33768
- [83d6e63aee] - **(SEMVER-MAJOR) events:** change `EventTarget` handler exception behavior (Nitzan Uziely) #37237
- [9948036ee0] - **(SEMVER-MAJOR) fs:** remove permissive `rmdir` recursive (Antoine du Hamel) #37216
- [d4693ff430] - **(SEMVER-MAJOR) fs:** add validation for `fd` and `path`

- (Dylan Elliott) #35187
- [0ddd75bcd8] - (**SEMVER-MAJOR**) **fs**: runtime deprecate rmdir recursive option (Antoine du Hamel) #37302
  - [da217d0773] - (**SEMVER-MAJOR**) **fs**: fix flag and mode validation (James M Snell) #37480
  - [2ef9a76ece] - (**SEMVER-MAJOR**) **http**: use objects with null prototype in Agent (Michaël Zasso) #36409
  - [25e30005b8] - (**SEMVER-MAJOR**) **lib**: runtime deprecate access to process.binding('http\_parser') (James M Snell) #37813
  - [8bb4e048af] - (**SEMVER-MAJOR**) **lib**: runtime deprecate access to process.binding('url') (James M Snell) #37799
  - [fe73e4d578] - (**SEMVER-MAJOR**) **lib**: make process.binding('util') return only type checkers (Anna Henningsen) #37819
  - [3bee6d8aad] - (**SEMVER-MAJOR**) **lib**: runtime deprecate access to process.binding('crypto') (James M Snell) #37790
  - [ac00df112e] - (**SEMVER-MAJOR**) **lib**: runtime deprecate access to process.binding('signal\_wrap') (James M Snell) #37800
  - [ae595d76e3] - (**SEMVER-MAJOR**) **lib**: runtime deprecate access to process.binding('v8') (James M Snell) #37789
  - [104dac79cc] - (**SEMVER-MAJOR**) **lib**: aggregate errors to avoid error swallowing (Antoine du Hamel) #37460
  - [1468c9ff7c] - (**SEMVER-MAJOR**) **lib**: runtime deprecate access to process.binding('async\_wrap') (James M Snell) #37576
  - [295e766c27] - (**SEMVER-MAJOR**) **lib**: remove usage of url.parse (raisinten) #36853
  - [cb3020d824] - (**SEMVER-MAJOR**) **lib**: add error handling for input stream (rexagod) #31603
  - [15164cebce] - (**SEMVER-MAJOR**) **lib,src**: update cluster to use Parent (Michael Dawson) #36478
  - [3cc9aec988] - (**SEMVER-MAJOR**) **module**: runtime deprecate sub-path folder mappings (Antoine du Hamel) #37215
  - [9fab73c73b] - (**SEMVER-MAJOR**) **module**: runtime deprecate "main" index and extension lookups (Antoine du Hamel) #37206
  - [76a073b67e] - (**SEMVER-MAJOR**) **module**: runtime deprecate invalid package.json main entries (Antoine du Hamel) #37204
  - [674614b3f5] - (**SEMVER-MAJOR**) **module**: remove module.createRequireFromPath (Antoine du Hamel) #37201
  - [aec5ebf49] - (**SEMVER-MAJOR**) **module**: only set cache when finding module succeeds (Yongsheng Zhang) #36642
  - [f0bf373176] - (**SEMVER-MAJOR**) **perf\_hooks**: make performance a global (James M Snell) #37970
  - [f3eb224c83] - (**SEMVER-MAJOR**) **perf\_hooks**: complete overhaul of the implementation (James M Snell) #37136
  - [f1753d4c76] - (**SEMVER-MAJOR**) **process**: disallow adding options to process.allowedNodeEnvironmentFlags (Antoine du Hamel) #36660
  - [96f3977ded] - (**SEMVER-MAJOR**) **process**: runtime deprecate chang-

ing process.config (James M Snell) #36902

- [45dbcbef90] - **(SEMVER-MAJOR) readline**: cursorTo throw error on NaN (Zijian Liu) #36379
- [bf79987433] - **(SEMVER-MAJOR) src**: mark internally exported functions as explicitly internal (Tyler Ang-Wanek) #37000
- [1fe571aa0c] - **(SEMVER-MAJOR) src**: inline AsyncCleanupHookHandle in headers (Tyler Ang-Wanek) #37000
- [dfc288e7fd] - **(SEMVER-MAJOR) src**: clean up embedder API (Anna Henningsen) #35897
- [65e8864fa3] - **(SEMVER-MAJOR) worker**: send correct error status for worker init (Yash Ladha) #36242

### Semver-Minor Commits

- [944a956087] - **(SEMVER-MINOR) assert**: graduate assert.match and assert.doesNotMatch (James M Snell) #38111
- [6a1986d50a] - **(SEMVER-MINOR) deps**: update llhttp to 5.1.0 (Fedor Indutny) #38146
- [069b5df4f6] - **(SEMVER-MINOR) module**: add support for node:-prefixed require(...) calls (ExE Boss) #37246
- [b803bca4fa] - **(SEMVER-MINOR) perf\_hooks**: add histogram option to timerify (James M Snell) #37475
- [95391fe689] - **(SEMVER-MINOR) repl**: add auto-completion for node:-prefixed require(...) calls (ExE Boss) #37246
- [15b8e6b1c4] - **(SEMVER-MINOR) timers**: graduate awaitable timers and improve docs (James M Snell) #38112
- [802171057f] - **(SEMVER-MINOR) util**: add getSystemErrorMap() impl (eladkeyshawn) #38101

### Semver-Patch Commits

- [8930eba199] - **assert**: change status of legacy asserts (James M Snell) #38113
- [0180fc5b9b] - **benchmark**: improve compare.R output (Brian White) #38118
- [8d9d8236b7] - **bootstrap**: mksnapshot should show JS error (Bradley Meck) #38174
- [6cb314bbe5] - **bootstrap**: print information for snapshot at environment exit in debug (Joyee Cheung) #37967
- [14aed60941] - **buffer,errors**: add missing n literal in range error string (Cactysman) #37750
- [049b703a28] - **build**: sync generation of v8\\_build\\_config.json (Richard Lau) #38263
- [1d21a8d140] - **build**: add riscv64 configure (luyahan) #37980
- [f5eea1744d] - **build**: don't run test workflow on doc dir on macOS (ycjcl868) #37999

- [2853b76e20] - **build**: add pummel tests to ci runs (Rich Trott) #34289
- [24426cd8c4] - **build**: prepare Windows coverage GitHub Action for pummel tests (Rich Trott) #34289
- [7df0fc5c5c] - **build**: move OPENSSL\_API\_COMPAT to else clause (Daniel Bevenius) #38126
- [9cfb418e1f] - **build**: package release changelog for releases (Richard Lau) #38033
- [558d1e6c22] - **build**: warn for gcc versions earlier than 8.3.0 (Richard Lau) #37935
- [a572a4e34e] - **build**: reset embedder string to “-node.0” (Michaël Zasso) #37587
- [f3c7078245] - **build**: reset embedder string to “-node.0” (Michaël Zasso) #37330
- [842389839b] - **build**: reset embedder string to “-node.0” (Michaël Zasso) #36139
- [98d1ae47cf] - **build**: reset embedder string to “-node.0” (Michaël Zasso) #35700
- [993ed19f9c] - **crypto**: reduce range of size to int max (Qingyu Deng) #38096
- [896dc39951] - **crypto**: fix webcrypto derive(Bits|Key) resolve values and docs (Filip Skokan) #38148
- [d2f116c6bb] - **crypto**: fixup randomFill size and offset handling (James M Snell) #38138
- [dfe3f952a3] - **crypto**: fix crash in CCM mode without data (Tobias Nießen) #38102
- [e8cb6446ef] - **crypto**: reconcile oneshot sign/verify sync and async implementations (Filip Skokan) #37816
- [1e4a2bcbee] - **crypto**: remove check for condition that is always true (Rich Trott) #38072
- [64d5be25ab] - **deps**: V8: cherry-pick 1648e050cade (Michaël Zasso) #37587
- [621b544909] - **deps**: silence irrelevant V8 warnings (Michaël Zasso) #37587
- [0d78bc3101] - **deps**: fix V8 build issue with inline methods (Jiawen Geng) #35415
- [5214918856] - **deps**: make v8.h compatible with VS2015 (Joao Reis) #32116
- [6b3caf77b2] - **deps**: V8: forward declaration of Rtl\*FunctionTable (Refael Ackermann) #32116
- [d0a032fafb] - **deps**: V8: patch register-arm64.h (Refael Ackermann) #32116
- [c8b2fa642e] - **deps**: V8: un-cherry-pick bd019bd (Refael Ackermann) #32116
- [8eeec19ae] - **deps**: V8: cherry-pick 8957d4677aa7 (Michaël Zasso) #37330
- [b186142a0b] - **deps**: V8: backport a11395433dbd (Michaël Zasso) #37330



- [290f2d8d3e] - **deps:** V8: cherry-pick deb0813166f3 (Michaël Zasso) #36139
- [63ed0b8bfe] - **deps:** V8: cherry-pick 9a6a22874c81 (Michaël Zasso) #36139
- [47f1c5257a] - **deps:** silence irrelevant V8 warning (Michaël Zasso) #37330
- [19d975241f] - **deps:** workaround stod() limitations on SmartOS (Colin Ihrig) #37330
- [70f928c6a6] - **deps:** fix V8 build issue with inline methods (Jiawen Geng) #35415
- [b045e39513] - **deps:** patch V8 to run on Xcode 8 (Mary Marchini) #32116
- [32725d2224] - **deps:** make v8.h compatible with VS2015 (Joao Reis) #32116
- [fe3cee7b37] - **deps:** V8: forward declaration of `Rtl\*FunctionTable` (Refael Ackermann) #32116
- [b2d05f7349] - **deps:** V8: patch register-arm64.h (Refael Ackermann) #32116
- [c7a0ab4e3d] - **deps:** patch V8 to run on older XCode versions (Ujjwal Sharma) #32116
- [60b623ee90] - **deps:** V8: un-cherry-pick bd019bd (Refael Ackermann) #32116
- [577ff9fee5] - **deps:** V8: cherry-pick deb0813166f3 (Michaël Zasso) #36139
- [00e1c7ea83] - **deps:** V8: cherry-pick 9a6a22874c81 (Michaël Zasso) #36139
- [ee01d6b7fc] - **deps:** V8: cherry-pick 2059ee813359 (Michaël Zasso) #36139
- [2dad8d43cc] - **deps:** V8: cherry-pick bde7ee5473d6 (Michaël Zasso) #36139
- [3046131ea0] - **deps:** V8: cherry-pick 9a712984025e (Michaël Zasso) #36139
- [d178d0738f] - **deps:** V8: cherry-pick 0b96e5b0bfb2 (Michaël Zasso) #36139
- [5c71ea151a] - **deps:** V8: cherry-pick fbb28902e049 (Michaël Zasso) #36139
- [c8e15cd2c6] - **deps:** V8: cherry-pick 821fb3883a8e (Michaël Zasso) #35700
- [b0d67426af] - **deps:** workaround stod() limitations on SmartOS (Colin Ihrig) #36139
- [c8a658ac53] - **deps:** fix V8 build issue with inline methods (Jiawen Geng) #35415
- [153b8cea36] - **deps:** patch V8 to run on Xcode 8 (Mary Marchini) #32116
- [a785984133] - **deps:** V8: silence irrelevant warnings (Michaël Zasso) #32116
- [246c9b8c31] - **deps:** make v8.h compatible with VS2015 (Joao Reis) #32116
- [96a567f9e9] - **deps:** V8: forward declaration of `Rtl\*FunctionTable`

- (Refael Ackermann) #32116
- [e74383cecb] - **deps:** V8: patch register-arm64.h (Refael Ackermann) #32116
  - [732847f1eb] - **deps:** patch V8 to run on older XCode versions (Ujjwal Sharma) #32116
  - [70171d186f] - **deps:** V8: un-cherry-pick bd019bd (Refael Ackermann) #32116
  - [15c91c6dd5] - **deps:** V8: cherry-pick 821fb3883a8e (Michaël Zasso) #35700
  - [40b2fa4832] - **deps:** V8: cherry-pick 45e49775f5a3 (Michaël Zasso) #35700
  - [cd91ab5865] - **deps:** V8: cherry-pick 7b3a27b7ae65 (Michaël Zasso) #35700
  - [f4fc099080] - **deps:** V8: cherry-pick d76abfed3512 (Michaël Zasso) #35415
  - [6200176ef0] - **deps:** fix V8 build issue with inline methods (Jiawen Geng) #35415
  - [bd5642deb9] - **deps:** update V8 postmortem metadata script (Colin Ihrig) #35415
  - [9ae7159216] - **deps:** update V8 postmortem metadata script (Colin Ihrig) #33579
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  - [f6a84540d8] - **deps:** V8: silence irrelevant warnings (Michaël Zasso) #32116
  - [bbc3f46572] - **deps:** make v8.h compatible with VS2015 (Joao Reis) #32116
  - [0c988642dc] - **deps:** V8: forward declaration of `Rtl\*FunctionTable` (Refael Ackermann) #32116
  - [703bf933d4] - **deps:** V8: patch register-arm64.h (Refael Ackermann) #32116
  - [5451975b18] - **deps:** patch V8 to run on older XCode versions (Ujjwal Sharma) #32116
  - [c460f7af4d] - **deps:** V8: un-cherry-pick bd019bd (Refael Ackermann) #32116
  - [bf9e9daaa5] - **deps:** update llhttp to 6.0.0 (Fedor Indutny) #38277
  - [94405650ae] - **deps:** upgrade npm to 7.10.0 (Ruy Adorno) #38254
  - [8e80fc7ff8] - **deps:** patch V8 to 9.0.257.17 (Michaël Zasso) #38237
  - [5b358d57e1] - **deps:** patch V8 to 9.0.257.16 (Michaël Zasso) #38218
  - [ee669a0d29] - **deps:** update ICU to 69.1 (Michaël Zasso) #38178
  - [2468e4ed3e] - **deps:** V8: backport d59db06bf542 (Antoine du Hamel) #38162
  - [c748668704] - **deps:** upgrade npm to 7.9.0 (Ruy Adorno) #38156
  - [ca13f7aaf3] - **deps:** V8: cherry-pick 501482cbc704 (Colin Ihrig) #38121
  - [bc531d1860] - **deps:** upgrade npm to 7.8.0 (Darcy Clarke) #38030
  - [d639321acd] - **deps:** patch V8 to 9.0.257.13 (Michaël Zasso) #37830
  - [bc31dc0e0f] - **dns:** refactor cares\_wrap internals (James M Snell) #38172

- [36decec87f] - **doc**: remove superfluous await from fsPromises.readdir example (Michael Rommel) #38293
- [ac2c8c530d] - **doc**: fixup http.IncomingMessage deprecation code (Guy Bedford) #36917
- [767643fc19] - **doc**: restore minimum Xcode version for macOS (Richard Lau) #38266
- [e541032276] - **doc**: fix typo in repl.md (Arkerone) #38244
- [fb93b71307] - **doc**: fix typo in buffer.md (Arkerone) #38243
- [7d688d4b36] - **doc**: fix missing backtick in fs.md (Siddharth) #38260
- [6d04cc6849] - **doc**: change “oject” to “object” (Arkerone) #38256
- [b4363f726c] - **doc**: revise TLS minVersion/maxVersion text (Rich Trott) #38202
- [98c2067f13] - **doc**: update BUILDING.md for Apple Silicon (Ash Cripps) #38227
- [4def7c4418] - **doc**: standardize on pseudorandom (Rich Trott) #38196
- [f1027ecf29] - **doc**: standardize command flag notes (Ferdinand) #38199
- [756d2e48d8] - **doc**: update buffer.constants.MAX\_LENGTH (Qingyu Deng) #38109
- [474fbb5f6e] - **doc**: clarify child\_process close event (Nitzan Uziely) #38181
- [eee2c331ef] - **doc**: add command flag to import.meta.resolve (Ferdinand) #38171
- [f46d29360c] - **doc**: advise against using randomFill on floats (Tobias Nießen) #38150
- [5823fc79ba] - **doc**: update links in ICU guide (Michaël Zasso) #38177
- [993a1da47c] - **doc**: mention cryptographic prng in description of randomUUID (Serkan Özel) #38074
- [5ba5cc8619] - **doc**: fix typos in doc/api/cli.md (Arkerone) #38163
- [6a2314acd7] - **doc**: add link to V8 (Voltrex) #38144
- [093b527b25] - **doc**: fix typo in assert.md (Arkerone) #38152
- [0fa579ac2a] - **doc**: add missing comma in crypto doc (Tobias Nießen) #38142
- [4bc8f7542f] - **doc**: fix typo in crypto (Arkerone) #38130
- [005ebafbd1] - **doc**: improve security text in collaborators guide (Rich Trott) #38107
- [54322b8d8b] - **doc**: apply consistent punctuation to header contributing guide (Akhil Marsonya) #38047
- [0d34767c4c] - **doc**: sending http request to localhost to avoid https redirect (Hassaan Pasha) #38036
- [f851efd2e1] - **doc**: apply sentence case to backporting-to-release-lines.md headers (marsonya) #37617
- [36bc8b905c] - **doc**: fix typo in fs.md (Antoine du Hamel) #38100
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- [ab42ef3930] - **doc**: add parentheses to function and move reference (Rich Trott) #38066

- [2861778ecd] - **doc**: change wording in doc/api/domain.md comment (Akhil Marsonya) #38044
- [361632dab1] - **doc**: fix lint error in modules.md (Rich Trott) #37811
- [b3f35e2c70] - **doc,lib**: add missing deprecation code (Colin Ihrig) #37541
- [cbe3b27166] - **doc,tools**: allow stability table to be updated (Richard Lau) #38048
- [8dd06850ae] - **esm**: use correct URL for error decoration (Bradley Meck) #37854
- [6bbe28552c] - **fs**: use `byteLength` to handle `ArrayBuffer` views (Michaël Zasso) #38187
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- [24fd791184] - **fs**: move constants to `internal/fs/utils.js` (Darshan Sen) #38061
- [40ace47396] - **http**: fixup perf regression (James M Snell) #38110
- [f4d3d12327] - **http**: use CRLF consistently in `_http_outgoing.js` (Daniel Bevenius) #37851
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- [d756d2b99c] - **lib**: enforce using `primordials.globalThis` instead of `global` (Antoine du Hamel) #38230
- [09c9e5dea4] - **lib**: avoid mutating `Error.stackTraceLimit` when it is not writable (Antoine du Hamel) #38215
- [23d2c54bab] - **lib**: add `globalThis` to `primordials` (Antoine du Hamel) #38211
- [78343bbdc5] - **lib**: add `WeakRef` and `FinalizationRegistry` to `primordials` (ExE Boss) #37263
- [656fb4657a] - **lib**: add `tsconfig` for code completions (Bradley Meck) #38042
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- [a9332e84bf] - **lib**: refactor to use `primordials` in `lib/internal/cli_table` (Akhil Marsonya) #38046
- [8d78d9ef27] - **lib**: load `v8_prof_processor` dependencies as ESM (Michaël Zasso) #37587
- [7b2bad4005] - **module**: clarify CJS global-like variables not defined error message (Antoine du Hamel) #37852
- [7869761c2e] - **net**: fix typo (Luigi Pinca) #38127
- [4afcd55274] - **node-api**: make reference weak parameter an indirect link to references (Chengzhong Wu) #38000
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- [548cbf0625] - **perf\_hooks**: fix loop delay resolution validation (Antoine du Hamel) #38166
- [13c931a9dc] - **process**: add range validation to `debugPort` (Colin Ihrig)

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- [8dd5dd8a4b] - **process**: do not lazily load AsyncResource (Michaël Zasso) #38041
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- [8e8dea36cc] - **src**: use non-deprecated GetCreationContext from V8 (Michaël Zasso) #37587
- [b1c1c4695c] - **src**: remove V8\_FT\_ADAPTOR for V8 update (Colin Ihrig) #37587
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- [001dc16cf1] - **src**: use non-deprecated V8 module and script APIs (Michaël Zasso) #37330
- [47a90d9f37] - **src**: update NODE\_MODULE\_VERSION to 92 (Michaël Zasso) #37330
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- [6f9cbcf6a6] - **src**: fix v8 api deprecation (Jiawen Geng) #35700
- [9d4d55bd94] - **src**: update NODE\_MODULE\_VERSION to 90 (Michaël Zasso) #35700
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- [4ad46e2fef] - **stream**: refactor to avoid unsafe array iteration (Antoine du Hamel) #37126
- [419686cdfb] - **stream**: refactor to use more primordials (Antoine du Hamel) #36346
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- [db9cf52dcf] - **test:** check the different error code on IBM i (Xu Meng) #38159
- [95ca351fd8] - **test:** skip fs.watch() test on IBMi (Rich Trott) #38192
- [8cee28465c] - **test:** fix test-dh-regr for OpenSSL 3 (Rich Trott) #34289
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- [cc4ee6cba8] - **test:** deflake test-http-many-ended-pipelines (Luigi Pinca) #38018
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- [d75543d8b5] - **test:** fix flaky timeout-delayed-body and headers tests (Nitzan Uziely) #38045
- [4f387c25cb] - **test:** fix flaky test-vm-memleak (Rich Trott) #38054
- [330f25ef82] - **test:** prepare for consistent comma-dangle lint rule (Rich Trott) #37930

- [31fe3b215f] - **test**: make sure http pipelining does not emit a warning (Matteo Collina) #37964
- [978bbf987c] - **test**: fix flaky test-http2-pack-end-stream-flag (James M Snell) #37814
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- [501ae0e6e3] - **test**: remove outdated V8 flag (Michaël Zasso) #37151
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- [896ae96a15] - **test**: mark WASI's test-return-on-exit as flaky (Colin Ihrig) #36139
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- [eb20447407] - **tls**: extract out SecureContext configuration (James M Snell) #38116
- [b16e79e05b] - **tls**: fix typo (Arkerone) #38129
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- [9843361c07] - **tools**: update V8 gypfiles for 9.0 (Michaël Zasso) #37587
- [017661768a] - **tools**: update V8 gypfiles for 8.9 (Michaël Zasso) #37330
- [79da253473] - **tools**: update V8 gypfiles for 8.8 (Michaël Zasso) #36139
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- [b87f1be92d] - **typings**: add types for "http\_parser" and "options" bindings (Michaël Zasso) #38239
- [1c8b2956d1] - **typings**: add types for internalBinding('serdes') (Michaël Zasso) #38204
- [d97787fccc] - **typings**: add JSDoc to os module functions (David Brownman) #38197
- [8acfe5c2a4] - **typings**: add JSDoc Types to lib/querysting (Simon Knott) #38185
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- [82d59882b1] - **typings**: add JSDoc typings for assert (Voltrex) #38188
- [f1a21e5c91] - **typings**: add JSDoc types to lib/path (Simon Knott) #38186

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