

@jridgewell/sourcemap-codec

Encode/decode the mappings property of a [sourcemap](#).

Why?

Sourcemaps are difficult to generate and manipulate, because the mappings property – the part that actually links the generated code back to the original source – is encoded using an obscure method called [Variable-length quantity](#). On top of that, each segment in the mapping contains offsets rather than absolute indices, which means that you can't look at a segment in isolation – you have to understand the whole sourcemap.

This package makes the process slightly easier.

Installation

```
npm install @jridgewell/sourcemap-codec
```

Usage

```
import { encode, decode } from '@rldgwell/source-map-codec';

var decoded = decode(
    ':EAEFA,EAAE,EAAC,CAAE;ECQY,UACC');

assert.deepEqual(decoded, [
    // the first line (of the generated
    code) has no mappings,
    // as shown by the starting semi-
    colon (which separates lines)
], [
    // the second line contains four
    (comma-separated) segments
]);
```

```

        // the remaining segments are 4-
        // length rather than 5-length,
        // because they don't map a name
        [ 4, 0, 2, 4 ],
        [ 6, 0, 2, 5 ],
        [ 7, 0, 2, 7 ]
    ],

    // the final line contains two
    // segments
    [
        [ 2, 1, 10, 19 ],
        [ 12, 1, 11, 20 ]
    ]
]);

var encoded = encode( decoded );
assert.equal( encoded,
    ';EAEA,EAAE,EAAC,CAAE;ECQY,UACC' );

```

Benchmarks

node v20.10.0

amp.js.map - 45120 segments

Decode Memory Usage:

local code

5815135 bytes

@jridgewell/sourcemap-codec 1.4.15

5868160 bytes

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source-map-codec 5492584 bytes
source-map-0.6.1 13569984 bytes
source-map-0.8.0 6390584 bytes
chrome dev tools 8011136 bytes
Smallest memory usage is source-map-codec

Decode speed:
decode: local code x 492 ops/sec \pm 1.22%
(90 runs sampled)

decode: @jridgewell/source-map-codec
1.4.15 x 499 ops/sec \pm 1.16% (89 runs
sampled)

decode: source-map-codec x 376 ops/sec
 \pm 1.66% (89 runs sampled)
decode: source-map-0.6.1 x 34.99 ops/sec
 \pm 0.94% (48 runs sampled)

decode: source-map-0.8.0 x 351 ops/sec
 \pm 0.07% (95 runs sampled)
chrome dev tools x 165 ops/sec \pm 0.91%
(86 runs sampled)

Fastest is decode: @jridgewell/
source-map-codec 1.4.15

Encode Memory Usage:

local code 444248 bytes
@jridgewell/source-map-codec 1.4.15 623024 bytes
source-map-codec 8696280 bytes
source-map-0.6.1 8745176 bytes
source-map-0.8.0

@jridgewell/sourcemap-codec 1.4.15
13537648 bytes
sourcemap-codec
32540104 bytes
source-map-0.6.1
127531040 bytes
source-map-0.8.0
127535312 bytes
Smallest memory usage is local code

Encode speed:
encode: local code x 20.10 ops/sec
±0.19% (38 runs sampled)
encode: @jridgewell/sourcemap-codec
1.4.15 x 20.26 ops/sec ±0.32% (38 runs
sampled)
encode: sourcemap-codec x 5.44 ops/sec
±1.64% (18 runs sampled)
encode: source-map-0.6.1 x 2.30 ops/sec
±4.79% (10 runs sampled)
encode: source-map-0.8.0 x 2.46 ops/sec
±6.53% (10 runs sampled)
Fastest is encode: @jridgewell/
sourcemap-codec 1.4.15

8736624 bytes
Smallest memory usage is local code

Encode speed:
encode: local code x 796 ops/sec ±0.11%
(97 runs sampled)
encode: @jridgewell/sourcemap-codec
1.4.15 x 795 ops/sec ±0.25% (98 runs
sampled)
encode: sourcemap-codec x 231 ops/sec
±0.83% (86 runs sampled)
encode: source-map-0.6.1 x 166 ops/sec
±0.57% (86 runs sampled)
encode: source-map-0.8.0 x 203 ops/sec
±0.45% (88 runs sampled)
Fastest is encode: local code, encode:
@jridgewell/sourcemap-codec 1.4.15

babel.min.js.map - 347793 segments

Decode Memory Usage:
local code
35424960 bytes
@jridgewell/sourcemap-codec 1.4.15
35424696 bytes
sourcemap-codec
36033464 bytes
source-map-0.6.1
62253704 bytes
source-map-0.8.0
43843920 bytes
chrome dev tools
45111400 bytes

Smallest memory usage is @jridgewell/
sourcemap-codec 1.4.15

Decode speed:
decode: local code x 38.18 ops/sec
±5.44% (52 runs sampled)
decode: @jridgewell/sourcemap-codec
1.4.15 x 38.36 ops/sec ±5.02% (52 runs
sampled)

decode: sourcemap-codec x 34.05 ops/sec
±4.45% (47 runs sampled)
decode: source-map-0.6.1 x 4.31 ops/sec
±2.76% (15 runs sampled)
decode: source-map-0.8.0 x 55.60 ops/sec
±0.13% (73 runs sampled)
chrome dev tools x 16.94 ops/sec ±3.78%
(46 runs sampled)
Fastest is decode: source-map-0.8.0

Encode Memory Usage:
local code
2606016 bytes
@jridgewell/sourcemap-codec 1.4.15
2626440 bytes
sourcemap-codec
21152576 bytes
source-map-0.6.1
25023928 bytes
source-map-0.8.0
25256448 bytes
Smallest memory usage is local code

Encode speed:
encode: local code x 127 ops/sec ±0.18%
(83 runs sampled)
encode: @jridgewell/sourcemap-codec
1.4.15 x 128 ops/sec ±0.26% (83 runs

vscode.map - 2141001 segments

Decode Memory Usage:

local code
198955264 bytes
@jridgewell/sourcemap-codec 1.4.15
199175352 bytes
sourcemap-codec
199102688 bytes
source-map-0.6.1
386323432 bytes
source-map-0.8.0
244116432 bytes
chrome dev tools
293734280 bytes
Smallest memory usage is local code

Decode speed:

decode: local code x 3.90 ops/sec
±22.21% (15 runs sampled)
decode: @jridgewell/sourcemap-codec
1.4.15 x 3.95 ops/sec ±23.53% (15 runs
sampled)
decode: sourcemap-codec x 3.82 ops/sec
±17.94% (14 runs sampled)
decode: source-map-0.6.1 x 0.61 ops/sec
±7.81% (6 runs sampled)
decode: source-map-0.8.0 x 9.54 ops/sec
±0.28% (28 runs sampled)
chrome dev tools x 2.18 ops/sec ±10.58%
(10 runs sampled)
Fastest is decode: source-map-0.8.0

Encode Memory Usage:

local code
13509880 bytes

decode: source-map-0.8.0 x 3,219 ops/sec
±0.13% (100 runs sampled)
chrome dev tools x 1,743 ops/sec ±0.20%
(99 runs sampled)
Fastest is decode: @jridgewell/
sourcemap-codec 1.4.15

Encode Memory Usage:

local code
140960 bytes
@jridgewell/sourcemap-codec 1.4.15
159808 bytes
sourcemap-codec
969304 bytes
source-map-0.6.1
930520 bytes
source-map-0.8.0
930248 bytes
Smallest memory usage is local code

Encode speed:

encode: local code x 8,013 ops/sec
±0.19% (100 runs sampled)
encode: @jridgewell/sourcemap-codec
1.4.15 x 7,989 ops/sec ±0.20% (101 runs
sampled)
encode: sourcemap-codec x 2,472 ops/sec
±0.21% (99 runs sampled)
encode: source-map-0.6.1 x 2,200 ops/sec
±0.17% (99 runs sampled)
encode: source-map-0.8.0 x 2,220 ops/sec
±0.37% (99 runs sampled)
Fastest is encode: local code

sampld)
encode: sourcemap-codec x 29.31 ops/sec
±2.55% (53 runs sampled)
encode: source-map-0.6.1 x 18.85 ops/sec
±3.19% (36 runs sampled)
encode: source-map-0.8.0 x 19.34 ops/sec
±1.97% (36 runs sampled)
Fastest is encode: @jridgewell/
sourcemap-codec 1.4.15

preact.js.map - 1992 segments

Decode Memory Usage:

local code
261696 bytes
@jridgewell/sourcemap-codec 1.4.15
244296 bytes
sourcemap-codec
302816 bytes
source-map-0.6.1
939176 bytes
source-
map-0.8.0 336
bytes
chrome dev tools
587368 bytes
Smallest memory usage is source-
map-0.8.0

Decode speed:

decode: local code x 17,782 ops/sec
±0.32% (97 runs sampled)
decode: @jridgewell/sourcemap-codec

```

1.4.15 x 17,863 ops/sec ±0.40% (100 runs
sampled)
decode: sourcemap-codec x 12,453 ops/sec
±0.27% (101 runs sampled)
decode: source-map-0.6.1 x 1,288 ops/sec
±1.05% (96 runs sampled)
decode: source-map-0.8.0 x 9,289 ops/sec
±0.27% (101 runs sampled)
chrome dev tools x 4,769 ops/sec ±0.18%
(100 runs sampled)
Fastest is decode: @jridgwell/
sourcemap-codec 1.4.15

Encode Memory Usage:
local code
262944 bytes
@jridgwell/sourcemap-codec 1.4.15
25544 bytes
sourcemap-codec
323048 bytes
source-map-0.6.1
507808 bytes
source-map-0.8.0
507480 bytes
Smallest memory usage is @jridgwell/
sourcemap-codec 1.4.15

Encode speed:
local code x 24,207 ops/sec
±0.79% (95 runs sampled)
encode: @jridgwell/sourcemap-codec
1.4.15 x 24,288 ops/sec ±0.48% (96 runs
sampled)
encode: sourcemap-codec x 6,761 ops/sec
±0.21% (100 runs sampled)
encode: source-map-0.6.1 x 5,374 ops/sec
±0.17% (99 runs sampled)

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8

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encode: source-map-0.8.0 x 5,633 ops/sec
±0.32% (99 runs sampled)
Fastest is encode: @jridgwell/
sourcemap-codec 1.4.15, encode: local
code
***

react.js.map - 5726 segments

Decode Memory Usage:
local code
678816 bytes
@jridgwell/sourcemap-codec 1.4.15
678816 bytes
sourcemap-codec
816400 bytes
source-map-0.6.1
2288864 bytes
source-map-0.8.0
721360 bytes
chrome dev tools
1012512 bytes
Smallest memory usage is local code

Decode speed:
local code x 6,178 ops/sec
±0.19% (98 runs sampled)
decode: @jridgwell/sourcemap-codec
1.4.15 x 6,261 ops/sec ±0.22% (100 runs
sampled)
decode: sourcemap-codec x 4,472 ops/sec
±0.90% (99 runs sampled)
decode: source-map-0.6.1 x 449 ops/sec
±0.31% (95 runs sampled)

```

9