See the <u>v4.0.0 release notes</u> for an overview of <u>what's new in 4.0.0</u>. Use <u>lodash-migrate</u>, <u>lodash-codemods</u>, & <u>eslint-plugin-lodash</u> to help migrate pre-4 lodash code to the latest release.

v4.17.21

February 21, 2021 — <u>Diff</u> — <u>Docs</u>

- Prevent command injection through .template 's variable option
- Improve performance of toNumber, trim and trimEnd on large input strings

v4.17.20

August 14, 2020 — Diff — Docs

- Fixed issue with dependencies mapping
- · Ensured modularized files in the lodash package are up to date

v4.17.19

July 8, 2020 — Diff — Docs

- Allowed .sortedIndexBy methods to short-circuit for empty arrays
- Ensured _.orderBy accepts iteratee path arrays
- Ensured __.isEqual returns accurate results without depending on parameter order for circular references
- Sanitized sourceURL in _.template
- Fix prototype pollution bug in .zipObjectDeep
- Note: releases of 4.17.16 to 4.17.18 of the lodash npm package were corrupted; please update to more recent versions

v4.17.15

July 17, 2019 — <u>Diff</u> — <u>Docs</u>

• Removed unintentionally published project helper scripts

v4.17.14

July 10, 2019 — Diff — Docs

• Reverted use of the "type" field in package.json of lodash-es

v4.17.13

July 9, 2019 — <u>Diff</u> — <u>Docs</u>

• Fixed missing dependency of createRound

v4.17.12

July 9, 2019 — Diff — Docs

- Ensured _.ceil , _.floor , & _round handle Infinity consistently
- Ensured .debounce clears old timers before starting new ones
- Ensured .mergeWith always provides a stack to customizer

- Ensured additions to Object.prototype don't break lodash initialization
- Ensured map and set clones contain custom properties of source values
- Fixed <u>prototype pollution</u> for .defaultsDeep
- Fixed prototype pollution for .template options

v4.17.11

Sep. 12, 2018 — Diff — Docs

- Ensured .merge handles function properties consistently regardless of number of sources
- Ensured Object.prototype is not augmented by .merge
- Ensured placeholder properties are set on fp.convert() results
- Avoided <u>ReDoS issue</u> in _.words implementation

v4.17.10

Apr. 24, 2018 — Diff — Docs

• Updated Lodash for better Node.js 10 support

v4.17.5

Feb. 3, 2018 — Diff — Docs

- Ensured _.clone supports subclassed arrays
- Ensured _.cloneDeep works with cyclical maps & sets
- Ensured .defaults avoids unnecessary source property access
- Ensured _.invert doesn't error on inverted values without toString methods
- Ensured _.merge & _.mergeWith avoid augmenting __proto__ properties
- Ensured .set supports paths with symbols
- Ensured .words detects ordinals in compound words
- Ensured fp.update works with paths that refer to functions

v4.17.4

Dec. 31, 2016 — Diff — Docs

• Ensured _.omit with deep paths doesn't mutate object

v4.17.3

Dec. 24, 2016 — Diff — Docs

- Added support for symbol properties to __.isEqual
- Ensured getSymbols helper only gets enumerable symbols
- \bullet Ensured _.startsWith $avoids\ coercing$ position $\ of$ undefined
- Flipped iteratee arguments for fp.reduceRight
- Removed the array length limit for lazy evaluation

v4.17.2

Nov. 15, 2016 — <u>Diff</u> — <u>Docs</u>

• Ensured _.pick picks keys over paths

- Ensured .spread doesn't include arguments after those spread
- Fixed .omit performance regression

v4.17.1

Nov. 14, 2016 — Diff — Docs

- Ensured .omit copies shallow path values by reference
- Ensured _.pick supports path arrays
- Ensured .pickBy doesn't treat keys with dots or brackets as deep paths

v4.17.0

Nov. 13, 2016 — <u>Diff</u> — <u>Docs</u>

- Added deep path support to _.omit & _.pick
- ullet Ensured fp.assignAllWith & fp.mergeAllWith accept more than two sources
- Made process.binding detection more cautious to avoid chatty debugging

v4.16.6

Oct. 31, 2016 — Diff — Docs

• Ensured .xor returns an empty array when comparing the same array

v4.16.5

Oct. 30, 2016 — Diff — Docs

- Added support for ordinal numbers to _.words
- Ensured _.xor works with more than two arrays
- Ensured fp.convert handles aliased & remapped methods
- Improved "fp" debugging
- Made "isType" methods resistant to toStringTag spoofing
- Made .isEmpty exit early for nullish values
- Refined __.isError checks to avoid false positives for plain objects
- Simplified .isElement

v4.16.4

Oct. 6, 2016 — Diff — Docs

- Added support for buffers to _.transform
- Added support for typed arrays to _.isEmpty
- Ensured _.toString works on an array of symbols
- Fixed __.merge regression with buffers
- Normalized buffers & typed arrays keys in "keys" methods
- Split .isArguments out for older & newer environments

v4.16.3

Oct. 3, 2016 — <u>Diff</u> — <u>Docs</u>

• Added a .runInContext check in the "fp" browser build

- Ensured .defaultsDeep & .merge consistently assign undefined values
- Fixed .isFunction detection of Proxy in Safari 10
- Made .isEqual treat buffers differently than Uint8Array values
- Removed <u>es-sham</u> requirement for older browsers

v4.16.2

Sept. 25, 2016 — <u>Diff</u> — <u>Docs</u>

- Fixed .sampleSize performance regression
- Made "clone" methods use newer Buffer APIs when available

v4.16.1

Sept. 20, 2016 — <u>Diff</u> — <u>Docs</u>

- Fixed backtick removal of _.escape & _.unescape
- Improved parse time by 2x in V8

v4.16.0

Sept. 19, 2016 — Diff — Docs

- Added fp.rangeStep & fp.rangeStepRight
- Added a cache limit to internal .memoize use
- Avoided V8 de-opts in _.isElement , _.isObject , & _.isObjectLike
- Dropped backtick encoding from .escape & .unescape
- Dropped testing in Node.js 0.10 & 0.12
- Ensured __proto__ is treated as a regular key in assignments
- Fixed _.bind & _.partial performance regression
- Optimized .concat

v4.15.0

Aug. 12, 2016 — Diff — Docs

- Added <u>Latin Extended-A block</u> support to .deburr
- Reduced dependencies of _.isEmpty & _.toNumber

v4.14.2

Aug. 8, 2016 — <u>Diff</u> — <u>Docs</u>

- Ensured methods work with mocked Date.now , clearTimeout , & setTimeout
- Ensured paths of "set" methods overwrite primitives
- Ensured fp.nthArg returns a curried function
- Reduced dependencies of _.initial , _.merge , & _.tail
- Removed old JIT & engine bug guards

v4.14.1

July 29, 2016 — Diff — Docs

• Ensured paths with consecutive empty brackets or dots are parsed correctly

- Ensured .random & "range" methods coerce arguments to finite numbers
- Fixed circular reference detection in .cloneDeep
- Removed global prerequisite for exports detection

v4.14.0

July 24, 2016 — Diff — Docs

- Added <u>.conformsTo</u> & <u>.defaultTo</u>
- Added more "fp" aliases
- Added "All" variants of fp/assign , fp/defaults , fp/merge , & fp/zip methods
- Ensured debounced cancel uses clearTimeout
- Ensured the alias _.first supports shortcut fusion
- Ensured .assignWith respects customizer results of undefined
- Ensured .divide & .multiply return 1 when no arguments are specified
- Ensured .isEqual has transitive equivalence for circular references
- Fixed argument order of fp/zipObjectDeep
- Simplified resolving the global object
- Stopped unconditional global exports in the browser
- Made per method packages zero-dependency modules
- Made wrapped function toString results more debuggable
- Made "flatten" methods honor Symbol.isConcatSpreadable
- Made .isEqual treat invalid dates as equivalent
- Made LARGE ARRAY SIZE check in stackSet align with others
- Optimized adding values to stacks by not inspecting all key-value pairs
- Optimized "isType" methods to use faster Node.js C++ helpers when available
- Optimized _.endsWith , _.negate , & _.startsWith

v4.13.1

May 23, 2016 — Diff — Docs

• Ensured .find & .findLast provide the correct key param when iterating objects

v4.13.0

May 22, 2016 — Diff — Docs

- Added <u>.stubArray</u>, <u>.stubFalse</u>, <u>.stubObject</u>, <u>.stubString</u>, & <u>.stubTrue</u>
- $\bullet \ \ \mathsf{Added} \ \ \mathsf{fromIndex} \ \ \mathsf{param} \ \mathsf{to} \ \ _. \\ \mathsf{find} \ \mathsf{Index} \ , \ \ _. \\ \mathsf{findLastIndex}$
- Ensured empty brackets & dots in paths are treated as empty property names
- Ensured .pullAll works with the same value for array & values
- Ensured .round works with large precision values
- Ensured _.throttle works with a system time of 0
- Made _.isNative throwif core-js is detected
- Simplified UMD exports
- Added fp/findFrom, fp/findIndexFrom, fp/findLastFrom, fp/findLastIndexFrom, fp/indexOfFrom, & fp/lastIndexOfFrom
- Fixed argument order of fp/differenceBy, fp/differenceWith, fp/intersectionBy, fp/intersectionWith, fp/without, fp/unionBy, fp/unionWith, fp/xorBy, & fp/xorWith

v4.12.0

May 8, 2016 — Diff — Docs

- Added <u>.toFinite</u>
- Added iteratee arity hints to "forEach" methods
- Added support for maps & sets to .toPairs & .toPairsIn
- Ensured .merge doesn't skip trailing function sources
- Ensured fp/forEach , fp/forIn , & fp/forOwn cap their iteratee arguments
- Ensured fp/update does not convert end of path to an object
- · Ensured matches methods match arrays with duplicate values
- Optimized "flatten" methods
- Simplified _.concat
- Updated cache implementations

v4.11.2

Apr. 21, 2016 — Diff — Docs

- Ensured .pullAt correctly sorts indexes greater than 9
- Ensured .words doesn't treat punctuation as words
- Ensured -0 works as path arguments
- Ensured set methods like _.uniq & _.xor convert -0 to 0

v4.11.1

Apr. 14, 2016 — Diff — Docs

- Added fp/pluck as an alias of fp/map
- \bullet <code>Ensured _.debounce defers invoking func when leading is false & wait is 0</code>

v4.11.0

Apr. 13, 2016 — Diff — Docs

- Added <u>.nth</u>
- Added .matchesProperty shorthand support to .sortBy
- Added support for contractions to case methods & __.words
- Avoided unnecessary array cloning in createRecurryWrapper & mergeData
- Ensured fp/over doesn't cap its iteratee arguments
- Made _.head avoid accessing array when its length is 0

v4.10.0

Apr. 11, 2016 — Diff — Docs

- Added isIterateeCall checkto _.split
- Added fp/paths & fp/props as aliases of fp/at
- Added fp/propEq as an alias of fp/matchesProperty
- Ensured _.debounce queues a trailing call for subsequent debounced calls after maxWait
- Ensured .split handles a limit of 0 correctly in Node.js v0.10
- Optimized handling of emojis in string methods

• Removed fp/mapObj & fp/propOf aliases

v4.9.0

Apr. 8, 2016 — Diff — Docs

- Added back .matchesProperty shorthand support to "over" methods
- Ensured .split works with emojis
- Fixed malformed fp/toString & fp/valueOf modules

v4.8.2

Apr. 4, 2016 — <u>Diff</u> — <u>Docs</u>

• Reverted .matchesProperty shorthand support for "over" methods

v4.8.1

Apr. 4, 2016 — Diff — Docs

• Fixed typo in fp/ falseOptions

v4.8.0

Apr. 4, 2016 — Diff — Docs

- Added fp/placeholder module & fp/__ alias
- Added convert to unconverted "fp" methods
- Added _.matchesProperty shorthand support to "over" methods
- Avoided errors in older Firefoxes when coercing Promise to a string
- Ensured _.has returns false for nested nullish object values
- Ensured .has treats nested sparse arrays consistently
- Fixed argument order of fp/overArgs
- \bullet Made _.chunk , _.repeat , & _.sampleSize default n to 1 instead of 0
- Optimized .matchesProperty shorthand

v4.7.0

Mar. 31, 2016 — Diff — Docs

- Added <u>.divide</u>, <u>.flatMapDeep</u>, <u>.flatMapDepth</u>, <u>.meanBy</u>, & <u>.multiply</u>
- Added $\underline{fp/convert}$, fp/invokeArgs, fp/invokeArgsMap, fp/padChars, fp/padCharsEnd, fp/padCharsStart, fp/restFrom, & fp/spreadFrom
- Added .entries as an alias of .toPairs
- Added _.entriesIn as an alias of _.toPairsIn
- Added several "fp" aliases
- Added support for buffers to _.isEmpty
- Added support for maps & sets to .isEmpty & .size
- Added support for deep cloning data views, maps, & sets
- Added symbol support to .omit , .toNumber , & .toPath
- Avoided a JIT bug in Safari 9 for baseIteratee
- Ensured array sequence methods don't error for falsey values
- Ensured _.concat casts non-array array values to arrays

- Ensured .has returns false for nested inherited properties
- Ensured .isEqual compares promises by reference
- Ensured _.isPlainObject returns false for objects with a custom [[Prototype]]
- Ensured .mergeWith sources are cloned when customizer returns undefined
- Ensured __.startCase only uppercases the first character of each word
- Ensured .words detects words where an all caps word is next to a capitalized word
- Fixed argument order of fp/bind, fp/bindKey, & fp/isEqualWith
- Fixed aliases fp/all , fp/any , & fp/anyPass
- Made .result resolve values of functions as it deep crawls over them
- Memoized stringToPath
- Optimized .pad , .padEnd , .padStart , & .toNumber
- Refactored .debounce to simplify, reduce timers, & fix bugs

v4.6.1

Mar. 1, 2016 — Diff — Docs

• Optimized baseClone to avoid cloning symbols for internal use

v4.6.0

Feb. 29, 2016 — <u>Diff</u> — <u>Docs</u>

- Added <u>.pullAllWith</u>, <u>.update</u>, & <u>.updateWith</u>
- Added core.min.js & lodash.min.js to the "fp" module ignored list
- Ensured _.defaultsDeep does not overwrite regexp values
- Ensured __.isEqual works with maps & sets with circular references
- Ensured "fp" uses lodash as the default placeholder
- Ensured stack is popped after a recursive merge so that it doesn't affect sibling properties
- Fixed order of arguments in "fp" docs
- Optimized baseIsEqualDeep by removing a typed array check & unnecessary stack creation
- Optimized _.assign , _.assignIn , & _.intersection
- Optimized .merge to avoid deep cloning sources if a customizer is provided
- Removed dead code from getNative
- Replaced Symbol checks with Symbol methods checks

v4.5.1

Feb. 21, 2016 — Diff — Docs

- Added core.min.js & lodash.min.js to the npm package
- Ensured placeholders persist through more than one curried call
- Ensured assignValue assigns values if they aren't the same own value
- Ensured "fp" methods avoid unnecessary cloning
- Ensured fp/omitBy & fp/pickBy provide value & key params to iteratees
- Fixed arity of fp/orderBy
- Used getPrototypeOf to set inheritance when constructor is a function

v4.5.0

Feb. 17, 2016 — Diff — Docs

- Enabled support for cloning expando properties of boolean, number, & string objects
- Ensured fp/convert wrappers support iteratee shorthands

v4.4.0

Feb. 15, 2016 — Diff — Docs

- Added <u>.castArray</u> & <u>.flattenDepth</u>
- Fixed argument order of fp/inRange & fp/zipWith
- Enabled fp/convert to auto wrap lodash in the browser
- Enabled fp/convert to work when given lodash with options
- Ensured fp/convert options works when applied individually
- Ensured fp/convert works with category modules
- Ensured .isError works with subclassed values
- Ensured .merge deep clones array, typed-array, & plain-object sources
- Ensured a debounced maxWait timeout isn't processed on a leading call when leading is false & there isn't a max delay queued

v4.3.0

Feb. 7, 2016 — Diff — Docs

- Added <u>.isArrayBuffer</u>, <u>.isBuffer</u>, <u>.isMap</u>, <u>.isSet</u>, <u>.isWeakMap</u>, & <u>.isWeakSet</u>
- Added options param to fp/convert
- Ensured default placeholder values are set for relevant method modules
- Ensured _ .add & _ .subtract return 0 when no arguments are given
- Ensured fp/gt , fp/gte , fp/lt , & fp/lte don't have rearg applied
- Improved accuracy of _.debounce & _.throttle

v4.2.1

Feb. 3, 2016 — Diff — Docs

- Added remap of fp/trim as fp/trimChars for chars param support
- Ensured wrapped .bind , .curry , & .partial support placeholders
- Ensured fp/_baseConvert uses _.spread for _.partial wrapper
- Ensured fp/add & fp/subtract don't have rearg applied

v4.2.0

Feb. 2, 2016 — Diff — Docs

- Added fp/assoc & fp/assocPath as aliases of fp/set
- Added fp/dissoc & fp/dissocPath as aliases of fp/unset
- Added start param to _.spread
- Ensured .attempt preserves custom errors
- Ensured fp/partial & fp/partialRight accept an args param
- Ensured fp/unset is immutable
- Ensured .iteratee clones sources for .matchesProperty shorthand
- Made .flatMap a "Collection" method
- Removed global references from the npm package

v4.1.0

Jan. 29, 2016 — Diff — Docs

- Added <u>.invertBy</u> & <u>.zipObjectDeep</u>
- · Added cherry pickable "fp" method modules to the npm package
- Ensured fp/convert works with aliases
- Ensured _.clone & _.cloneDeep work on prototype objects
- Ensured __.mergeWith overwrites primitives with source object clones
- Ensured _.sum & _.sumBy return 0 for empty arrays
- Optimized _.isEmpty for objects
- ullet Fixed argument order of fp/assign , fp/defaults , & fp/merge

v4.0.1

Jan. 25, 2016 — Diff — Docs

- Added _.matches to the core build
- Added placeholder support to "fp" methods
- Added support for keycap emojis
- Ensured .concat returns an empty array for nullish values
- ullet Ensured _.each & _.eachRight aliases have the correct chain behavior
- Ensured _.defaultsDeep doesn't convert function properties to objects
- Ensured _.fromPairs can consume results of _.toPairs
- Ensured _.isEqual compares objects unordered
- Ensured __noConflict restores _ only if lodash is the current value
- Ensured _.words captures all-caps words
- Ensured __.words treats all-lower & all-upper postfixes as separate words
- Fixed "fp" mapping of several methods
- Made _.omitBy & _.pickBy provide a key param to iteratees

v4.0.0

Jan. 12, 2016 — Diff — Docs

Compatibility Warnings

- Removed Bower & Component package support in favor of npm
- Dropped <u>IE 6-8 support</u>
- Use es5-shim, & optionally es6-shim, to enable support
- Made _#times , _#forEach , _#forIn , _#forOwn , & their right-forms implicitly end chain sequences

```
var wrapped = _([1, 2, 3]);

// in 3.10.1
wrapped.forEach(function(n) { console.log(n); });

// → returns the lodash wrapper without logging until `value` is called wrapped.forEach(function(n) { console.log(n); }).value();

// → logs each value from left to right and returns the array
```

```
// in 4.0.0
wrapped.forEach(function(n) { console.log(n); });
// → logs each value from left to right and returns the array
```

• Removed category names from module paths

```
// in 3.10.1
var chunk = require('lodash/array/chunk');

// in 4.0.0
var chunk = require('lodash/chunk');
```

• Removed .pluck in favor of .map with iteratee shorthand

```
var objects = [{ 'a': 1 }, { 'a': 2 }];

// in 3.10.1
_.pluck(objects, 'a'); // → [1, 2]
_.map(objects, 'a'); // → [1, 2]

// in 4.0.0
_.map(objects, 'a'); // → [1, 2]
```

• Removed thisArg params from most methods because they were largely unused, complicated implementations, & can be tackled with _.bind , Function#bind , or arrow functions

```
var objects = [{ 'a': 1 }, { 'a': 2 }];
var context = { 'b': 5 };

function callback(item) {
  return item.a + this.b;
}

// in 3.10.1
_.map(objects, callback, context);

// in 4.0.0
_.map(objects, _.bind(callback, context));
```

• Split .max & .min into _.maxBy & _.minBy

```
var array = [1, 2, 3],
    objects = [{ 'a': 1 }, { 'a': 2 }];

// in 3.10.1
_.max(array); // \rightarrow 3
_.max(objects, 'a'); // \rightarrow { 'a': 2 }
```

```
.min(array); // \rightarrow 1
.min(objects, 'a'); // → { 'a': 1 }
// in 4.0.0
.max(array); // → 3
_.maxBy(objects, 'a'); // → { 'a': 2 }
.min(array); // \rightarrow 1
.minBy(objects, 'a'); // → { 'a': 1 }
• Method removals
    • Removed .support
    • Removed .findWhere in favor of .find with iteratee shorthand
    • Removed .where in favor of .filter with iteratee shorthand
    • Removed .pluck in favor of .map with iteratee shorthand
• Method renames
    • Renamed .first to .head
    • Renamed .indexBy to .keyBy
    • Renamed .invoke to .invokeMap
    • Renamed .modArgs to .overArgs
    • Renamed .padLeft & .padRight to .padStart & .padEnd
    • Renamed .pairs to .toPairs
    • Renamed _.rest to _.tail
    • Renamed .restParam to .rest
    • Renamed _.sortByOrder to _.orderBy
    • Renamed _.trimLeft & _.trimRight to _.trimStart & _.trimEnd
    • Renamed .trunc to .truncate
· Split out methods
    • Split .assign & .assignIn into .assignWith & .assignInWith
    • Split .clone & .cloneDeep into .cloneWith & .cloneDeepWith
    • Split .invert into .invertBy (see v4.1.0)
    • Split .isEqual into .isEqualWith
    • Split .isMatch into .isMatchWith
    • Split .max & .min into .maxBy & .minBy
    • Split .merge into .mergeWith
    • Split .omit & .pick into .omitBy & .pickBy
    • Split .sample into .sampleSize
    • Split .sortedIndex into _.sortedIndexBy
    • Split _.sortedLastIndex into _.sortedLastIndexBy
    • Split _.sum into _.sumBy
    • Split _.uniq into _.sortedUniq, _.sortedUniqBy,& _.uniqBy
    • Split _.zipObject into _.fromPairs
• Absorbed _.sortByAll into _.sortBy
```

- Changed the category of .at to "Object"
- Changed the category of _.bindAll to "Util"

- Changed .matchesProperty shorthand to an array of [path, srcValue]
- Enabled .merge to assign undefined if the destination property doesn't exist
- Made "By" methods like .groupBy & .sortBy provide a single param to iteratees
- Made _.add , _.max , _.min , & _.sum no longer coerce values to numbers
- Made .capitalize uppercase the first character & lowercase the rest (see <u>.upperFirst</u>)
- Made .eq its own method instead of an alias for .isEqual
- Made .functions return only own method names
- Made .max & .min return undefined when passed an empty array
- Made .words chainable by default
- Moved ./lodash.js to ./dist/lodash.js in the master branch
- Moved ./index.js to ./lodash.js in the npm branch
- Removed isDeep params from .clone & .flatten
- Removed multiValue param from _.invert
- Removed support for binding all methods by default from .bindAll
- Removed func -first param signature from .before & .after

Low Risk Compatibility Warnings

- Dropped boolean options param support in .debounce , .mixin ,& .throttle
- Dropped support for boolean orders param in .orderBy
- Made .escapeRegExp align to the defunct ES7 proposal
- Made _.max , _.min , & _.sum support arrays only
- Removed legacy options param signature from .template

Notable Changes

- Core build
- 4 kB (gzipped) core build (64 methods; Backbone ≥ v1.3.0 compatible)

```
__assignIn , __before , __bind , __chain , __clone , __compact , __concat ,
__create , __defaults , __defer , __delay , __each , __escape , __every , __filter ,
__find , __first , __flatten , __flattenDeep , __forEach , __has , __head ,
__identity , __indexOf , __isArguments , __isArray , __isBoolean , __isDate ,
__isEmpty , __isEqual , __isFinite , __isFunction , __isNaN , __isNull , __isNumber ,
__isObject , __isRegExp , __isString , __isUndefined , __iteratee , __keys , __last ,
__map , __matches , _max , __min , __mixin , __negate , __noConflict , __noop ,
__once , __pick , __reduce , __result , __size , __slice , __some , __sortBy , __tap ,
__thru , __toArray , __uniqueId , _#value ,& __values
```

- Reduced functionality:
 - Cloning only supports arrays & Object objects
 - Iteratee shorthand for __.matchesProperty is removed
 - Lazy evaluation is removed
 - Placeholder support is removed
 - Support for deep property paths is removed
 - Support for maps, sets, & typed arrays is removed
- Added 80 methods
- 22 array methods:

__concat, __differenceBy, __differenceWith, __fromPairs, __intersectionBy, __intersectionWith, __join, __pullAll, __pullAllBy, __reverse, __sortedIndexBy, __sortedIndexOf, __sortedLastIndexBy, __sortedLastIndexOf, __sortedUniq, __sortedUniqBy, __unionBy, __unionWith, __uniqBy, __uniqWith, __xorBy, & __xorWith

• 18 lang methods:

__cloneDeepWith, _.cloneWith, _.eq, __isArrayLike, _isArrayLikeObject, __isEqualWith, __isInteger, __isLength, __isMatchWith, __isNil, __isObjectLike, __isSafeInteger, __isSymbol, __toInteger, __toLength, __toNumber, __toSafeInteger, & __toString

• 13 object methods:

_assignIn, _assignInWith, _assignWith, _functionsIn, _hasIn, _invoke, _mergeWith, _omitBy, _pickBy, _setWith, _toPairs, _toPairsIn, & _unset

• 8 string methods:

_lowerCase, _lowerFirst, _replace, _split, _upperCase, _upperFirst, _toLower, & _toUpper

• 8 utility methods:

_.cond, _.conforms, _.nthArg, _.over, _.overEvery, _.overSome, _.rangeRight, & _.toPath

• 4 math methods:

_maxBy, _mean, _minBy, & _sumBy

• 2 collection methods:

_.flatMap (see v4.2.0) & _.sampleSize

• 2 function methods:

<u>.flip</u> & <u>.unary</u>

• 2 number methods:

.clamp & .subtract

• 1 chain method:

_#next

- Added 3 aliases
- Added _.extend as an alias of _.assignIn
- Added _.extendWith as an alias of _.assignInWith
- Added .first as an alias of .head
- Removed 17 aliases
- Removed .all in favor of .every
- Removed .any in favor of _.some
- Removed .backflow in favor of _.flowRight
- Removed .callback in favor of .iteratee
- Removed _.collect in favor of _.map
- Removed _.compose in favor of _.flowRight
- Removed _.contains in favor of _.includes
- Removed _.detect in favor of _.find
- Removed _.foldl in favor of _.reduce
- Removed .foldr in favor of .reduceRight
- Removed _.include in favor of _.includes
- Removed .inject in favor of .reduce
- Removed _.methods in favor of _.functions
- Removed _.object in favor of _.fromPairs or _.zipObject
- Removed #run in favor of #value
- Removed _.select in favor of _.filter

- Removed .unique in favor of .uniq instead
- Performance improvements
- Enabled shortcut fusion for .at , .find & .findLast
- Optimized match methods to avoid deep crawling if object & source identical
- Optimized circular reference searches
- Optimized .isEqual to avoid stack crawls when arrays or objects are different sizes
- Emoji support
- Added support for astral symbols, combining diacritical marks, dingbats, regional indicator symbols, unicode modifiers, variation selectors, & zero-width-joiners to string methods
- Functional goodies
- Added <u>.cond</u>, <u>.conforms</u>, <u>.flip</u>, <u>.nthArg</u>, <u>.over</u>, <u>.overEvery</u>, <u>.overSome</u>, & <u>.unary</u>
- Moved lodash-fp into lodash as require('lodash/fp') for immutable auto-curried iterateefirst data-last methods

Other Changes

- Added clear method to .memoize.Cache
- Added flush method to debounced & throttled functions
- Added support for maps, sets, & symbols to _.clone , _.isEqual , & _.toArray
- Added support for array buffers to _.isEqual
- Added support for converting iterators to _.toArray
- Added support for deep paths to .zipObject
- Changed UMD to export to window or self when available regardless of other exports
- Enabled _.flow & _.flowRight to accept an array of functions
- Ensured "Collection" methods treat functions as objects
- Ensured debounce cancel clears args & thisArg references
- Ensured _.add & _.sum don't skip NaN values
- Ensured .assign , .defaults , & .merge coerce object values to objects
- Ensured _.bindKey bound functions call object[key] when called with the new operator
- Ensured .clone treats generators like functions
- Ensured .clone produces clones with the source's [[Prototype]]
- Ensured _.defaults assigns properties that shadow Object.prototype
- Ensured _.defaultsDeep doesn't merge a string into an array
- Ensured _.defaultsDeep & _.merge don't modify sources
- Ensured _.defaultsDeep works with circular references
- Ensured .isFunction returns true for generator functions
- Ensured _.keys skips "length" on strict mode arguments objects in Safari 9
- Ensured .merge assigns typed arrays directly
- Ensured .merge doesn't convert strings to arrays
- Ensured .merge merges plain-objects onto non plain-objects
- Ensured #plant resets iterator data of cloned sequences
- Ensured .random swaps min & max if min is greater than max
- Ensured .range preserves the sign of start of -0
- Ensured .reduce & .reduceRight use getIteratee in their array branch
- Fixed rounding issue with the precision param of _.floor
- Made (...) an iterator & iterable
- Made .drop , .take , & right forms coerce n of undefined to 0

v3.10.1

Aug. 4, 2015 — Diff — Docs

- Ensured func is a function before calling getData
- Ensured .clone provides the correct number of arguments to customizer
- Ensured #reverse doesn't modify the original array when called after #slice

v3.10.0

June 30, 2015 — <u>Diff</u> — <u>Docs</u>

- Added $_.\mathtt{ceil}$, $_.\mathtt{defaultsDeep}$, $_.\mathtt{floor}$, $_.\mathtt{modArgs}$, & $_.\mathtt{round}$
- Ensured .bind works with all built-in constructors
- Ensured #concat treats sparse arrays as dense
- Ensured .chunk floors size values
- ullet Ensured $_. \mathtt{debounce}$ & $_. \mathtt{throttle}$ reset lastCall after cancelling
- Ensure .flow & .flowRight work with functions combined with .first
- Ensured .indexOf returns -1 for unmatched binary searches
- Ensured _.noConflict operates on root & not context
- Made _.escapeRegExp more robust
- Made _.sortByOrder support orders of "asc" & "desc"
- Optimized .flatten , .max , & .min
- Removed fallbacks for _.isArguments , _.isFunction , & _.isPlainObject
- Simplified lazy evaluation support
- Simplified .isElement, .isFinite, .isNative, .now, .parseInt,& .sum

v3.9.3

May 26, 2015 — <u>Diff</u> — <u>Docs</u>

- Made parseFloat assigned from the context param of _.runInContext
- Ensured __.set handles non-index property names that start with numbers correctly

v3.9.2

May 24, 2015 — Diff — Docs

- Made isLaziable work with wrapped lodash methods
- Optimized an early exit case in .isEqual
- Optimized _.sample

v3.9.0

May 19, 2015 — <u>Diff</u> — <u>Docs</u>

- Added .gt, .gte, .lt,& .lte
- \bullet Added support for an <code>ImmutableMap</code> to <code>_.memoize.Cache</code>
- Avoided using require in source comments to improve browserify build times
- Ensured baseCreate works in ExtendScript
- Ensured customizer results are respected by _.isEqual
- Ensured LodashWrapper.prototype.thru exists before creating a wrapper in flow

- Ensured .bind works with ES2015 class constructors
- Ensured .get can return null values
- Ensured .intersection works with a single array
- Ensured .has treats sparse arrays as dense
- Ensured _.merge skips undefined array values if a destination value exists
- Made null sort behind undefined & NaN
- Made _.eq an alias of _.isEqual
- Optimized object comparisons in _.isEqual
- Optimized .max & .min when invoked with iteratees
- Optimized .pullAt & .remove
- Used hasOwnProperty for the creation of reIsNative to avoid issues with core-js

v3.8.0

May 1, 2015 — Diff — Docs

- Added _.mapKeys , _.unzipWith ,& _.zipWith
- Made _.difference , _.intersection , _.uniq ,& _.xor accept array-like values
- Ensured empty brackets are ignored by .get & .set
- Ensured baseAt, basePullAt, & pullAt handle nullish values
- Ensured baseGet only returns undefined for incomplete paths
- ullet Ensured $_.\mathtt{padLeft}$ & $_.\mathtt{padRight}$ handle empty strings correctly
- Made .isEqual treat -0 & 0 as equivalent
- Narrowed bitmask checks in _.flow & _.flowRight
- Optimized lazy slice for start of 0
- Optimized "flatten" methods
- Restricted Object.assign use to strict mode only

v3.7.0

Apr. 15, 2015 — Diff — Docs

- Added _.get , _.method , _.methodOf , & _.set
- Avoided a <u>JIT bug</u> in Safari on at least iOS 8.1-8.3 ARM64
- Ensured .intersection of a single array returns an empty array
- Ensured .remove mutates array after the predicate pass
- Ensured methods like __.has & __.get can access index values of strings
- Made createAssigner & .sortByAll use .restParam
- Made _.add coerce augend & addend params to numbers
- Made _.assign use built-in Object.assign when available
- Made .inRange swap start & end params when start is greater than end
- Added deep path support to methods like _.has , _.get , _.callback , _.invoke , _.matchesProperty , _.method , _.methodOf , _.property , _.propertyOf , _.result ,& _.set

v3.6.0

Mar. 25, 2015 — Diff — Docs

• Added .restParam

- Added isIterateeCall guards to .every , .includes , & .some
- Added support for iteratee & thisArg params to .sum
- Added support for shortcut fusion optimizations to .flow & .flowRight
- Ensured lodash bundled by r.js runs in a web worker
- Ensured .deburr removes combining diacritical marks
- Ensured .difference is based on the values of the first param only
- Expanded metadata optimizations to more combinations of curried functions
- Made .matches work with non-plain objects & match inherited properties
- Optimized .findLast , .reduce , & .reduceRight
- · Reduced code duplication with internal method creator functions

v3.5.0

Mar. 8, 2015 — Diff — Docs

- Added string replace & split chaining methods
- Ensured lazy drop works when applied after filter
- Optimized curried method performance

v3.4.0

Mar. 6, 2015 — Diff — Docs

- Added .add , .sortByOrder ,& .sum
- Adjusted root to work when bundled by webpack & running in a web worker
- Ensured lazy chaining works with combinations of drop & dropWhile
- Ensured _.defaults works as an iteratee for _.reduce
- Reduced side effects of shortcut fusion
- Optimized baseFlatten, baseIndexOf, indexOfNaN, _.flow,& _.flowRight
- Optimized lazy evaluation for iteratees with one param

v3.3.1

Feb. 24, 2015 — Diff — Docs

- Ensured lazy takeWhile works with lazy reverse & last
- Ensured wait defaults to 0 for _.debounce & _.throttle
- Ensured isIterateeCall doesn't error if index is missing a toString method
- Optimized _.difference , _.intersection , & _.uniq in Firefox

v3.3.0

Feb. 20, 2015 — Diff — Docs

- Added .inRange
- Added links to each method's npm package to the documentation
- Enabled .clone to work with more truthy isDeep values
- Ensured each lodash wrapper module sets up their inheritance
- Ensured isIterateeCall works with NaN values
- Ensured .merge avoids iterating string object or source params
- Optimized .attempt
- Reduced nested dependencies of _.template

v3.2.0

```
    Feb. 12, 2015 — Diff — Docs
    Added .fill , .mat
```

- Added _.fill , _.matchesProperty , & _.spread
- Added #commit & #plant
- Added support for lazy _.compact & _.toArray
- Enabled .attempt to provide additional arguments to func
- Ensured .flow returns an identity function when called without arguments
- Ensured #reverse tracks chain values
- Ensured lazy .slice handles floating-point start & end params
- Fixed lazy .slice when used after .filter
- Made #run an alias of #value

v3.1.0

Feb. 3, 2015 — Diff — Docs

- Added .startCase
- Ensured isIterateeCall works correctly with objects

v3.0.1

Jan. 30, 2015 — Diff — Docs

- Ensured .slice coerces floating-point start & end params to integers
- Fixed lazy initial, rest, & reverse
- Fixed .merge regression with DOM elements

v3.0.0

Jan. 26, 2015 — <u>Diff</u> — <u>Docs</u>

Compatibility Warnings

• Made chaining lazy, that is, execution is deferred until #value is implicitly or explicitly called

```
var wrapped = _([1, 2, 3]);

// in 2.4.1
wrapped.forEach(function(n) { console.log(n); });

// → logs each value from left to right and returns the lodash wrapper

// in 3.0.0
wrapped.forEach(function(n) { console.log(n); });

// → returns the lodash wrapper without logging until `value` is called wrapped.forEach(function(n) { console.log(n); }).value();

// → logs each value from left to right and returns the array
```

• Ensured each segment of a chain sequence may be repeatly applied

```
var array = [1],
   wrapped = _(array);
var a = wrapped.push(2), // pushes `2` to `array`
   b = wrapped.push(3); // pushes `3` to `array`
a.value(); // → returns `array`; [1, 2, 3]
b.value(); // \rightarrow \text{returns `array`; [1, 2, 3]}
// in 3.0.0
var a = wrapped.push(2), // creates a lazy sequence to push `2` to `array`
   b = wrapped.push(3); // creates a lazy sequence to push `3` to `array`
a.value(); // \rightarrow pushes `2` to `array` and returns `array`; [1, 2]
b.value(); // \rightarrow pushes `3` to `array` and returns `array`; [1, 2, 3]
a.value(); // \rightarrow pushes `2` to `array` and returns `array`; [1, 2, 3, 2]
b.value(); // \rightarrow pushes `3` to `array` and returns `array`; [1, 2, 3, 2, 3]
// use `_#commit` to commit a sequence and continue chaining
var a = wrapped.push(2).commit(), // pushes `2` to `array`
   b = wrapped.push(3).commit(); // pushes `3` to `array`
a.value(); // → returns `array`; [1, 2, 3]
b.value(); // \rightarrow \text{returns `array`; [1, 2, 3]}
```

• Made .flatten shallow by default & remove callback support

```
var array = [1, [[2], 3]],
    objects = [{ 'a': [1] }, { 'a': [2, 3] }];

// in 2.4.1
_.flatten(array); // \rightarrow [1, 2, 3]
_.flatten(objects, 'a'); // [1, 2, 3]

// in 3.0.0
_.flatten(array); // \rightarrow [1, [2], 3]
_.flattenDeep(array); // \rightarrow [1, 2, 3]
_(objects).pluck('a').flatten().value(); // [1, 2, 3]
```

• Removed the data parameter from .template

```
var string = '<%= o.a %>',
    options = { 'variable': 'o' },
    data = { 'a': 'b' };

// in 2.4.1
_.template(string, data, options); // → 'b'
```

```
// in 3.0.0
_.template(string, options)(data); // → 'b'
```

• Split _.first & _.last into _.take, _.takeWhile, _.takeRight,& _.takeRightWhile

```
var array = [1, 2, 3],
    lessThanTwo = function(value) { return value < 2; },</pre>
    greaterThanTwo = function(value) { return value > 2; };
// in 2.4.1
_.first(array); // \rightarrow 1
_.first(array, 2); // \rightarrow [1, 2]
.first(array, lessThanTwo); // \rightarrow [1]
.last(array); // \rightarrow 3
\_.last(array, 2); // \rightarrow [2, 3]
_.last(array, greaterThanTwo); // \rightarrow [3]
// in 3.0.0
.first(array); // \rightarrow 1
_.take(array, 2); // \rightarrow [1, 2]
_.takeWhile(array, lessThanTwo); // \rightarrow [1]
\_.last(array); // \rightarrow 3
_.takeRight(array, 2); // \rightarrow [2, 3]
.takeRightWhile(array, greaterThanTwo); // → [3]
```

• Split _.initial & _.rest into _.dropRight, _.dropRightWhile, _.drop,& _.dropWhile

```
var array = [1, 2, 3],
    lessThanTwo = function(value) { return value < 2; },
    greaterThanTwo = function(value) { return value > 2; };

// in 2.4.1
_.initial(array); // → [1, 2]
_.initial(array, 2); // → [1]
_.initial(array, greaterThanTwo); // → [1, 2]

_.rest(array); // → [2, 3]
_.rest(array, 2); // → [3]
_.rest(array, lessThanTwo); // → [2, 3]

// in 3.0.0
_.initial(array); // → [1, 2]
_.dropRight(array, 2); // → [1]
_.dropRightWhile(array, greaterThanTwo); // → [1, 2]
_.rest(array); // → [2, 3]
```

```
_.drop(array, 2); // → [3]
_.dropWhile(array, lessThanTwo); // → [2, 3]
```

- Aligned _.isFinite & _.keys with ES2015
- Changed the category of _.clone & _.cloneDeep , & "isType" methods from "Object" to "Lang"
- Changed the category of _.escape , _.template , & _.unescape from "Util" to "String"
- Changed the category of .range from "Array" to "Util"
- Changed the category of _.toArray from "Collection" to "Lang"
- Made method categories singular
- Made "Object" methods coerce primitives to objects
- Made _.clone & _.cloneDeep return a new object for unsupported types
- Made _.findWhere its own method instead of an alias for _.find
- Made .max & .min non-chainable by default
- ullet Made .memoize caches have the Map interface of delete, get, has, & set
- Made .unzip its own method instead of an alias for .zip
- Moved ./dist/lodash.js to ./lodash.js in the master branch
- Moved ./dist/lodash.js to ./lodash.js in the npm branch
- $\bullet \quad Moved \quad ./\texttt{dist/lodash.compat.js} \quad to \ the \quad \texttt{lodash/lodash-compat} \quad repository$
- Moved support for sorting by multiple properties from .sortBy to .sortByAll
- Removed result sorting from .functions
- Removed the underscore build
- Renamed .createCallback to .callback
- Renamed _.support.argsClass to _.support.argsTag
- Renamed _.support.nodeClass to _.support.nodeTag
- Restricted _.mixin to iterating only own properties of source objects
- Expanded the number of arguments provided to customizer callbacks of _.assign , _.clone , _.cloneDeep , _.isEqual , & _.merge

Low Risk Compatibility Warnings

- Added customizable argument placeholder support to _.bind, _.bindKey, _.curry,
 _.curryRight , _.partial , & _.partialRight
- Added support for matching NaN to _.difference , _.includes , _.indexOf , _.intersection , _.lastIndexOf , _.union , _.uniq ,& _.xor
- ullet Ensured _.assign & _.merge don't assign customizer results if it's unchanged
- Ensured _.mixin doesn't extend lodash when given an empty options object
- Ensured .sortedIndex returns values that align with the sort order of .sortBy
- Ensured functions of _.matches return true when comparing empty sources
- Ensured functions of __.matches perform own property checks on objects
- Made .chain use an existing wrapper if available instead of creating a new wrapper
- Removed the argCount parameter from _.callback

Notable Changes

- · Added 47 methods
- 17 string methods:

```
_.camelCase, _.capitalize, _.deburr, _.endsWith, _.escapeRegExp, _.kebabCase, _.pad, _.padLeft, _.padRight, _.repeat, _.snakeCase, _.startsWith, _.trim, _.trimLeft, _.trimRight, _.trunc,& _.words
```

• 11 array methods: .chunk, .dropRight, .dropRightWhile, .dropWhile, .flattenDeep, .pullAt, .slice, .sortedLastIndex, .takeRight, .takeRightWhile,& .takeWhile • 6 function methods: $_.ary$, $_.before$, $_.curryRight$, $_.flow$, $_.negate$, & $_.rearg$ • 5 lang methods: _.isError , _.isMatch , _.isNative , _.isTypedArray , & _.toPlainObject • 3 utility methods: $_.$ attempt, $_.$ matches,& $_.$ propertyOf • 2 collection methods: .partition & .sortByAll • 2 object methods: _.keysIn & _.valuesIn • 1 chain method: .thru Added 5 aliases • Added .backflow & .compose as aliases of .flowRight • Added .contains as an alias of .includes • Added .iteratee as an alias of .callback • Added #toJSON as an alias of #valueOf • Performance improvements • Improved overall performance 20-40% Method chaining supports lazy evaluation • Methods with support for shortcut fusion: _.drop , _.dropRight , _.dropRightWhile , _.dropWhile , _.filter , _.first , _.initial,_.last,_.map,_.pluck,_.reject,_.rest,_.reverse,_.slice, _.take, _.takeRight, _.takeRightWhile, _.takeWhile, & _.where • Other optimized methods: .bind, .clone, .cloneDeep, .compact, .compose, .contains, .difference, _.escape , _.flatten , _.invoke , _.isEqual , _.isObject , _.matches , _.max , _.min , _.partial , _.shuffle , _.unescape , _.uniq , _.without ,& _.zip • Functional goodies Added _.ary , _.curryRight , _.flow , & _.rearg • Added placeholder support to _.bind , _.bindKey , _.curry , _.curryRight , _.partial ,& .partialRight Methods that work as an iteratee for __.map , & the like, out of the box: _.ary , _.callback , _.chunk , _.clone , _.create , _.curry , _.curryRight , _.drop , _.dropRight , _.flatten , _.invert , _.max , _.min , _.parseInt , _.slice , .sortBy, .take, .takeRight, .template, .trim, .trimLeft, .trimRight, $_.$ trunc , $_.$ random , $_.$ range , $_.$ sample , $_.$ uniq , & $_.$ words Methods that work as an iteratee for .reduce , & the like, out of the box:

 $_.$ assign , $_.$ defaults , $_.$ merge , & $_.$ sortAllBy

Other Changes

- Added cherry pickable method modules to the npm package
- Added cancel method to debounced & throttled functions
- Added defaultValue param to _.result
- Added multiValue param to .invert
- Added thisArg param to _.tap
- Added _.memoize.Cache to enable Map / WeakMap to be used
- Added support for cloning array buffers & typed arrays to .clone & .cloneDeep
- Added support for comparing error objects & typed arrays to __.isEqual
- Enabled the sourceURL option of _.template to work in production builds
- Ensured _.at , _.matches , & _.pullAt work with falsey values when keys are given
- Ensured .callback doesn't error when func is nullish & thisArg is given
- Ensured .callback supports binding built-in methods
- ullet Ensured $_.\mathtt{debounce}$ & $_.\mathtt{throttle}$ work if the system time is set backwards
- Ensured .difference works with arrays regardless of argument position
- Ensured _.findWhere & _.where always use _.matches
- Ensured _.includes supports fromIndex when iterating objects
- Ensured _.indexOf([], undefined, true) returns -1 instead of 0
- Ensured _.intersection ignores non-array secondary values
- Ensured __.isEqual works with wrapped objects containing constructor properties
- Ensured .keys treats sparse arrays as dense
- Ensured . keys works with string objects in IE < 9
- Ensured _.matches comparison isn't affected by changes to source objects
- ullet Ensured $_.max$ & $_.min$ return the correct value when <code>callback</code> computes $\pm Infinity$
- Ensured _.merge ignores undefined values of source object properties
- Ensured _.partial & _.partialRight work with curried functions
- Ensured _.pluck always uses _.property
- Ensured .random returns 1 or 0 when called with no arguments
- Ensured _.range , _.slice , & other methods handle NaN arguments
- Ensured _.runInContext uses a zeroed _.uniqueId counter
- Ensured _.transform checks that object is an object before using its [[Prototype]]
- Ensured _.where handles source objects with undefined property values
- Ensured .where only returns elements that contain all source array/object values
- Ensured browserified lodash works in web workers
- Ensured customizing _.indexOf affects _.includes when iterating objects
- Ensured lodash works in NW.js
- Ensured lodash doesn't add Function.prototype extensions to its prototype
- Fixed __isFunction for typed array constructors in Safari 8
- Made _.escape & _.unescape handle backticks
- Made _.isElement more robust
- Made .parseInt more closely follow spec
- Made _.wrap use _.identity when wrapper is nullish
- Made templates avoid referencing .escape if "escape" delimiters are not used
- Made array-like object checks follow ES2015 ToLength
- Made use of Set in _.difference , _.intersection , & _.uniq
- Removed array & object pools
- Removed all method compilation from the compat build

• Updated the sourceURL syntax used by .template

v2.4.2

Apr. 26, 2015 — Diff — Docs

• Avoided memory leaks in .bind, .bindKey, .curry, .partial, & .partialRight

v2.4.1

Dec. 2, 2013 — Diff — Docs

- Ensured bindData is properly cloned
- Ensured .isEqual can compare cyclical objects with shared property values
- Optimized .partial & .partialRight
- Reached ~100% code coverage

v2.4.0

Nov. 25, 2013 — Diff — Docs

- Added _.constant , _.mapValues , _.now , _.property , & _.xor
- Added an options param to _.mixin to specify whether functions added are chainable
- Added support for __.sortBy to accept an array of property names to sort by
- Enabled _.zipObject to accept an array of keys with no values param
- Removed conditional setImmediate use from .defer

v2.3.0

Nov. 10, 2013 — Diff — Docs

- Added .create & .noop
- Avoided memory leaks in .debounce & .throttle
- Enhanced _.createCallback to avoid binding functions bound by Function#bind
- Ensured rebound functions correctly partially apply arguments
- Ensured .isEqual works with values from Object.create(null) & (false)
- Ensured .min & .max work as callbacks for .map
- Ensured .template coerces the text param to a string
- Optimized .difference, .omit,& .without by way of baseDifference
- Optimized .isBoolean , .isNumber , & .isString for the false case
- Optimized _.sample & _.shuffle by way of baseRandom
- Reduced _.wrap by way of createBound
- Removed native Function#bind use for better cross-environment consistency

v2.2.1

Oct. 3, 2013 — <u>Diff</u> — <u>Docs</u>

- Ensured _.mixin creates functions that work with _.chain
- Ensured the the createObject fallback is included in the modern build

v2.2.0

Sept. 28, 2013 — <u>Diff</u> — <u>Docs</u>

- Added .clone support for date, regexp, & other built-in objects
- Ensured .random avoids excessive results of 0 for floating-point numbers
- Made compat & underscore builds use Date.now when available
- Reduced dependencies on getObject & releaseObject

v2.1.0

Sept. 22, 2013 — Diff — Docs

- Added Object.defineProperty fallback for the modern build
- Added support to . random to explicitly specify floating point numbers
- Enabled .compose to be invoked without arguments
- Ensured .flatten works with extremely large arrays
- Ensured . support properties aren't minified
- Ensured reThis isn't used in Windows 8 applications
- Made UMD more resistant to false positives
- Optimized .isArguments & .isArray fallbacks

v2.0.0

Sept. 13, 2013 — Diff — Docs

Compatibility Warnings

- Aligned .after with Underscore 1.5.0, making it always return a function
- Made _.unzip an alias of _.zip

Notable Changes

- Created lodash methods as npm packages & AMD/Node.js modules
- Made .chain force chaining for all methods
- Moved the build utility to lodash-cli
- \bullet Optimized _.contains , _.debounce , _.isArguments , _.throttle ,& _.where
- Optimized functions of $_.$ bind, $_.$ bindKey, $_.$ curry, $_.$ partial, & $_.$ partialRight
- Added _.curry , _.forEachRight , _.indexBy , _.findLast , _.findLastIndex , _.findLastKey , _.forInRight , _.forOwnRight , _.pull , _.remove ,& _.sample

Other Changes

- Added Curl & Dojo module loaders to the unit tests
- Added the modularize build option
- Added support for the <code>iife</code> command to be used without an <code>%output%</code> token
- Added support for .mixin to accept a destination object
- Added support for _.range to accept a step of 0
- Ensured "Array" methods support arguments objects
- Ensured "Function" methods throw on non-functions
- Ensured _.at works as a callback for _.map
- Ensured _.createCallback works when no argCount is specified
- Ensured _.first & _.last return arrays when given an n with a falsey array
- $\bullet \quad Ensured \quad _. \texttt{flatten} \quad works \ with \quad \texttt{arguments} \quad objects$
- Ensured minified files work with Dojo's builder
- Ensured _.zipObject skips falsey elements
- Improved dead code removal from builds

- Improved JSDoc syntax
- Made .eachRight an alias of .forEachRight
- Made .memoize avoid prefixing cache keys when using a resolver function
- Removed local clearTimeout & setTimeout variables from the underscore build
- Reduced the size of the repo & npm package
- Simplified the bailout in createCache
- Updated sourceURL & sourceMappingURL syntax
- Updated underscore build compatibility to v1.5.2

v1.3.1

June 12, 2013 — Diff — Docs

- Added missing cache property to the objects returned by getObject
- Ensured maxWait unit tests pass in Ringo
- Increased the maxPoolSize value
- Optimized releaseArray & releaseObject

v1.3.0

June 11, 2013 — Diff — Docs

- Added .transform
- Added .chain & .findWhere aliases
- Added internal array & object pooling
- Added Istanbul test coverage reports to Travis CI
- Added maxWait option to .debounce
- Added support for floating point numbers to __.random
- Added Volo configuration to package.json
- Adjusted UMD for component build
- Enabled more stable mixing of lodash & underscore build methods
- Ensured debounced function with leading & trailing options works as expected
- Ensured minified builds work with the Dojo builder
- Ensured minification avoids deoptimizing expressions containing boolean values
- Ensured support for --output paths containing build command keywords
- Ensured unknown types return false in _.isObject & _.isRegExp
- Ensured _.clone , _.flatten , & _.uniq can be used as callback for _.map
- Ensured .forIn works on objects with longer inheritance chains in IE < 9
- Ensured .isPlainObject returns true for empty objects in IE < 9
- Ensured _.max & _.min chain correctly
- Ensured clearTimeout use doesn't cause errors in Titanium
- Ensured that the --stdout build option doesn't write to a file
- Exposed memoized function's cache
- Fixed Error.prototype iteration bugs
- Fixed "scripts" paths in component.json
- Made methods support customizing _.indexOf
- Made the build track dependencies of private functions
- Made the template pre-compiler build option avoid escaping non-ascii characters
- Made .createCallback avoid binding functions if they don't reference this
- Optimized the Closure Compiler minification process

- Optimized the large array cache for .difference , .intersection , & .uniq
- Optimized internal _.flatten & _.indexOf use
- Reduced .unzip & .zip
- Removed special handling of arrays in .assign & .defaults

v1.2.1

Apr. 29, 2013 — Diff — Docs

- Added Component package support
- Updated the build utility to work with changes in GitHub's API
- Ensured .isPlainObject works with objects created by Object.create(null)
- Ensured "isType" methods return false for subclassed values
- Ensured debounced functions, with leading & trailing calls enabled, only perform trailing calls after they're called more than once

v1.2.0

Apr. 16, 2013 — Diff — Docs

- Added .unzip
- \bullet Added an options param to _.debounce & _.throttle
- Enabled non- underscore builds to include _.findWhere & _.chain
- Ensured "Array" & "Object" methods work with arguments objects & arrays respectively
- Ensured build utility runs on Windows
- Ensured underscore build versions of "isType" methods align with Underscore
- Ensured methods avoid issues with the __proto__ property
- Ensured .isEqual uses a callback only if it's a function
- Ensured _.merge applies a callback to nested properties
- Ensured _.merge provides the correct callback arguments when comparing objects
- · Made lodash work with Browserify
- Removed all method compilation from the modern build

v1.1.1

Mar. 27, 2013 — Diff — Docs

- Ensured the underscore build of .forEach accepts a thisArg param
- Updated vendor/tar to work with Node.js v0.10

v1.1.0

Mar. 26, 2013 — Diff — Docs

- Added .createCallback, .findIndex, .findKey, .parseInt,& .runInContext
- Added .support
- \bullet Added callback & thisArg params to _.flatten
- Added rhino -require support
- Added CommonJS/Node.js support to precompiled templates
- Ensured the exports object is not a DOM element
- Ensured _.isPlainObject returns false for objects without a [[Class]] of "Object"
- Made callback support in .cloneDeep more closely follow its documentation

- Made .object an alias of .zipObject
- Made the template precompiler create missing directories of --output paths
- Optimized method chaining, object iteration, .find , & .pluck
- Updated backbone build method dependencies

v1.0.2

Feb. 18, 2013 — Diff — Docs

• Ensured .isPlainObject works when built-in Object.getPrototypeOf is unavailable

v1.0.1

Feb. 18, 2013 — Diff — Docs

- Added support for specifying source map URLs in -p / --source-map options
- Ensured the second argument to __.assign is not treated as a callback
- Ensured -p / --source-map build options correctly set the sourceMappingURL
- Made -p / --source-map set source map "sources" keys based on the build
- Made .defer use setImmediate, in Node.js, when available
- Made .where search arrays for values regardless of their index position
- Removed dead code from .template

v1.0.0

Feb. 14, 2013 — Diff — Docs

Compatibility Warnings

• Made .defaults preserve null values, instead of overwriting them

Changes

- Added _.at & _.partialRight
- Added modern & -p / --source-map build options
- Added "imports" option to _.templateSettings
- Added support for _.pluck & _.where callback shorthands
- Ensured .assign & .defaults support arrays
- Ensured .merge assigns null values & produces dense arrays
- Deferred minifier downloads until the lodash utility requires them
- Flipped noNodeClass test to avoid Firebug's "break on all errors" feature
- Made _.where support deep object comparisons
- Optimized _.invert , _.pairs , & _.values
- Reduced $_.max$, $_.min$, $_.pluck$, $_.toArray$, & $_.where$
- Removed support for automatic with-statement removal from __.template
- Simplified createIterator & iteratorTemplate
- Tweaked .uniqueId to avoid problems with buggy minifiers
- Updated underscore build compatibility to v1.4.4
- Added callback & thisArg params to _.assign , _.clone , _.cloneDeep , _.first , _.last , _.initial , _.isEqual , _.merge , & _.rest

v1.0.0-rc.3

Dec. 17, 2012 — Diff — Docs

Compatibility Warnings

- Made _#join , _#pop , & _#shift wrapper methods return unwrapped values
- Made "Function" methods wrapper counterparts return wrapped values
- Removed "chain" methods

Changes

- Added .cloneDeep
- Added .once to the backbone build
- Ensured backbone builds implement Underscore's chaining behavior
- Ensured the settings=... build option doesn't clobber the default moduleId
- Ensured lodash's npm package works when packages aren't globally installed
- Made compiled templates exported for AMD use the lodash module for
- Removed the _.forEach dependency from _.intersection
- Optimized _.isArray & _.isFunction fallbacks as well as _.intersection , _.isDate , _.isRegExp , _.reduce , _.reduceRight , _.union , & _.uniq

v1.0.0-rc.2

Dec. 5, 2012 — Diff — Docs

- · Specified more method chaining behaviors
- Updated underscore build compatibility to v1.4.3

v1.0.0-rc.1

Dec. 4, 2012 — Diff — Docs

Compatibility Warnings

- Added support for arguments objects to _.clone
- Ensured _.clone creates plain object clones of non-plain objects
- Made _(...) chain automatically without needing to call _#chain
- Made _.isEqual equate arguments objects to similar Object objects

Changes

- Ensure lodash runs in the JS engine embedded in Adobe products
- Ensured _.reduce & _.reduceRight provide the correct callback arguments
- \bullet <code>Ensured _.throttle nulls the timeoutId</code>
- Made deep .clone more closely follow the structured clone algorithm
- Optimized compiled templates in Firefox
- Optimized _.forEach , _.forOwn , _.isNumber ,& _.isString
- Simplified iteratorTemplate

v0.10.0

Nov. 17, 2012 — Diff — Docs

Compatibility Warnings

- Renamed .lateBind to .bindKey
- Made _.defaults & _.extend iterate only own properties of source objects to align with Object.assign

Changes

- · Added the build commands used to custom build copyright/license headers
- Added .assign
- Ensured the underscore build of .find returns the first match, not last
- Ensured _.defaults , _.extends , & _.merge work with _.reduce
- Made lodash's npm package installation work with more system configurations
- Made .extend an alias of .assign
- Optimized .contains , .defaults , .extend , & .filter
- Restricted .where to iterate only own properties of source objects
- Updated backbone build lodash method dependencies

v0.9.2

Nov. 9, 2012 — Diff — Docs

- Added fromIndex param to .contains
- Added moduleId build option
- Added Closure Compiler "simple" optimizations to the build process
- Added support for strings in _.max & _.min
- Added support for ES2015 template delimiters to .template
- Ensured re-minification of lodash by third parties avoids Closure Compiler bugs
- Optimized _.every , _.find , _.some ,& _.uniq

v0.9.1

Oct. 31, 2012 — Diff — Docs

- Ensured _.every returns false as soon as the callback result is falsey
- Ensured .isFinite returns false for non-numeric values
- Removed .forEach chainability in the underscore build
- Simplified _.union

v0.9.0

Oct. 24, 2012 — <u>Diff</u> — <u>Docs</u>

- Added a sourceURL option to _.template
- Ensured .where returns an empty array if given an empty properties object
- Expanded .isFinite to return true for numeric strings
- \bullet Reduced _.intersection , _.omit , _.pick , _.sortedIndex ,& _.where
- Reduced the npm package size by only downloading minifiers for global installs
- · Reduced lodash's file size
- Improved source code comprehension by removing compilation from _.bindAll , _.contains , _.countBy , _.every , _.filter , _.find , _.functions , _.groupBy , _.invert , _.invoke , _.isEmpty , _.map , _.merge , _.omit , _.pairs , _.pick , _.pluck , _.reduce , _.reject , _.some , _.sortBy , _.values , _.where , & internal shimKeys

v0.8.2

Oct. 10, 2012 — Diff — Docs

- Ensured .map returns an array when given a falsey collection
- Ensured _.throttle clears its timeout when func is called

- Made .max , .min , .shuffle support iterating objects
- Reduced createIterator, .clone, .compact
- Re-optimized .max , .min , & .sortedIndex

v0.8.1

Oct. 4, 2012 — Diff — Docs

- Enabled deep clone support in the underscore build when clone is explicitly included
- · Reverted removal of first argument falsey checks from methods

v0.8.0

Oct. 1, 2012 — Diff — Docs

Compatibility Warnings

- Made .random return 0 or 1 when no arguments are given
- Moved late bind functionality from .bind to .lateBind
- Removed first argument falsey checks from methods
- Removed support for custom clone , isEqual , toArray methods from _.clone , _.isEqual ,
 & _.toArray

Changes

- Added -d / --debug , -m/--minify , minus , plus , settings , & template build options
- Added _.isPlainObject & _.lateBind
- Enabled .sortedIndex to accept a property name as the callback param
- Ensured methods accept a thisArg of null
- Fixed the life build option to accept more values
- Made .times return an array of callback results
- Simplified _.max , _.min ,& _.reduceRight

v0.7.0

Sept. 11, 2012 — Diff — Docs

Compatibility Warnings

- Renamed .zipObject to .object
- Replaced .drop with .omit
- Made .drop an alias of .rest

Changes

- Added _.invert , _.pairs , & _.random
- Added .result to the backbone build
- Added exports , iife , -c / --stdout , -o / --output ,& -s / --silent build options
- Ensured isPlainObject works with objects from other documents
- Ensured .isEqual compares values with circular references correctly
- Ensured __.merge work with four or more arguments
- Ensured .sortBy performs a stable sort for undefined values
- Ensured .template works with "interpolate" delimiters containing ternary operators
- Ensured the production build works in Node.js
- Ensured template delimiters are tokenized correctly
- Made pseudo private properties chain & wrapped double-underscored to avoid conflicts

- Made minify.js support underscore.js
- Reduced the size of mobile & underscore builds
- Simplified .isEqual & .size

v0.6.1

Aug. 29, 2012 — Diff — Docs

- Ensured IE conditional compilation isn't enabled by the useSourceURL test
- Optimized isPlainObject

v0.6.0

Aug. 28, 2012 — Diff — Docs

- Added callback & thisArg params to $_.drop \& _.pick$
- Added hasObjectSpliceBug test to avoid delete operator use
- Added .unescape
- Ensured .reduce works with string objects in IE < 9
- Made _.omit an alias of _.drop
- Made compiled methods take advantage of engines with strict mode optimizations
- Optimized _.intersection & removed its dependency on _.every
- Reduced the file size of the underscore build

v0.5.2

Aug. 21, 2012 — Diff — Docs

- Ensured .isElement uses strict equality for its duck type check
- Ensured .isObject returns a boolean value
- Ensured .template & "Object" methods don't error when given falsey values
- Made .template generate less unused code in compiled templates

v0.5.1

Aug. 18, 2012 — Diff — Docs

• Ensured .bind correctly appends array arguments to partially applied arguments in older browsers

v0.5.0

Aug. 17, 2012 — <u>Diff</u> — <u>Docs</u>

- \bullet Added <code>.countBy</code> , <code>_.drop</code> , <code>_.merge</code> , & <code>_.where</code>
- Added csp (Content Security Policy) & underscore build options
- Added deep cloning support to _.clone
- Added Jam package support
- Added support for exiting early in .forEach , .forIn , & .forOwn
- $\bullet \ \ \ \ \, \text{Added support for jQuery/MooTools DOM query collections to} \ \ _. \texttt{isEmpty} \ \ \& \ \ _. \texttt{size}$
- Ensured development build works with IE conditional compilation enabled
- Ensured _.clone doesn't clone arguments objects, DOM nodes, functions, or non-plain objects
- Ensured .filter's callback can't modify result values
- Ensured _.isEmpty , _.isEquals , & _.size support arguments objects

- Ensured __.isEqual doesn't inspect DOM nodes, works with objects from other documents, & calls
 custom isEqual methods before checking strict equality
- Ensured .once frees the given function for garbage collection
- Ensured .sortBy performs a stable sort
- Ensured reEvaluateDelimiter is used when .templateSettings.evaluate is undefined
- Made .range coerce arguments to numbers
- Optimized _.isFunction

v0.4.2

July 16, 2012 — Diff — Docs

- Added strict build option
- Ensured _.bindAll , _.defaults , & _.extend avoid strict mode errors on read-only properties
- ullet Optimized the iteration of large arrays in $_$.difference, $_$.intersection, & $_$.without
- Fixed build bugs related to removing variables

v0.4.1

July 11, 2012 — Diff — Docs

- Fixed _.template regression
- Optimized build process to detect & remove more unused variables

v0.4.0

July 11, 2012 — Diff — Docs

- Added bin & scripts entries to package.json
- Added legacy build option
- Added cross-browser support for strings to "Collection" methods
- Added _.zipObject
- Leveraged _.indexOf 's fromIndex in _.difference & _.without
- Optimized compiled templates
- Optimized inlining the iteratorTemplate for builds
- Optimized object iteration for "Collection" methods
- Optimized partially applied _.bind in V8
- Made compiled templates more debuggable
- Made .size work with falsey values & consistent cross-browser with arguments objects
- Moved _.groupBy & _.sortBy back to the "Collection" category
- Removed arguments object from _.range

v0.3.2

June 14, 2012 — Diff — Docs

- Ensured __.escape returns an empty string for nullish values
- Ensured sourceURL support doesn't cause errors in Adobe's JS engine
- Fixed regression in generating custom builds
- Moved .invoke & .pluck back to the "Collection" category
- Moved .tap to the "Seq" category

v0.3.1

June 10, 2012 — Diff — Docs

- Added backbone build option
- Ensured "Array" methods allow falsey array params
- Removed .isArguments fallback from the mobile build
- Simplified _.pluck , _.values & _(...) method wrappers

v0.3.0

June 6, 2012 — Diff — Docs

- Added .forIn & .forOwn
- Added category build option
- Added fromIndex param to .indexOf & .lastIndexOf
- Added //@ sourceURL support to _.template
- Added thisArg param to .sortedIndex & .uniq
- Ensured array-like objects with invalid length properties are treated like regular objects
- Ensured _.sortedIndex supports arrays with high length values
- Fixed prototype iteration bug in _.keys
- Optimized _.times & this bindings in iterator methods

v0.2.2

May 30, 2012 — Diff — Docs

- Added mobile build option
- Ensured .find returns undefined for unmatched values
- Ensured .templateSettings.variable is compatible with Underscore
- Optimized _.escape
- Reduced dependencies of _.find

v0.2.1

May 24, 2012 — Diff — Docs

- Adjusted the lodash export order for r.js
- Ensured _.groupBy values are added to own, not inherited, properties
- Made .bind follow ES5 spec to support a popular Backbone.js pattern
- Removed the alias _.intersect
- Simplified _.bind , _.flatten , _.groupBy , _.max , & _.min

v0.2.0

May 21, 2012 — Diff — Docs

- Added _.partial
- Added thisArg param to .groupBy
- Added "lazy bind" support to .bind
- Added custom build options
- Added default _.templateSettings.variable value

- Added native method overwrite detection to avoid bad native shims
- Added support for more AMD build optimizers & aliasing as the "underscore" module
- Added whitespace to compiled strings
- Commented the iterationFactory options object
- Ensured _(...) returns given wrapper instances
- Ensured .max & .min support extremely large arrays
- Ensured _.throttle works in tight loops
- Fixed clearTimeout typo
- Fixed [DontEnum] bug in IE < 9
- Fixed prototype iteration bug in Firefox < 3.6, Opera < 11.60, & Safari < 5.1
- Inlined .isFunction calls
- Made .debounce 'ed functions match .throttle 'ed functions' return value behavior
- Made .escape no longer translate the ">" character
- Simplified all "Array" methods
- Optimized _.debounce , _.escape , _.flatten , _.forEach , _.groupBy , _.intersection , _.invoke , _.isObject , _.max , _.min , _.pick , _.shuffle , _.sortedIndex , _.template , _.throttle , _.union , _.uniq

v0.1.0

Apr. 23, 2012 — Docs

• Initial release