

# Query string

*Stability: 3 - Legacy*

The `querystring` module provides utilities for parsing and formatting URL query strings. It can be accessed using:

```
const querystring = require('querystring');
```

The `querystring` API is considered Legacy. While it is still maintained, new code should use the `{URLSearchParams}` API instead.

## `querystring.decode()`

The `querystring.decode()` function is an alias for `querystring.parse()`.

## `querystring.encode()`

The `querystring.encode()` function is an alias for `querystring.stringify()`.

## `querystring.escape(str)`

- `str` {string}

The `querystring.escape()` method performs URL percent-encoding on the given `str` in a manner that is optimized for the specific requirements of URL query strings.

The `querystring.escape()` method is used by `querystring.stringify()` and is generally not expected to be used directly. It is exported primarily to allow application code to provide a replacement percent-encoding implementation if necessary by assigning `querystring.escape` to an alternative function.

## `querystring.parse(str[, sep[, eq[, options]]])`

- `str` {string} The URL query string to parse
- `sep` {string} The substring used to delimit key and value pairs in the query string. **Default:** `'&'`.
- `eq` {string}. The substring used to delimit keys and values in the query string. **Default:** `'='`.
- `options` {Object}
  - `decodeURIComponent` {Function} The function to use when decoding percent-encoded characters in the query string. **Default:** `querystring.unescape()`.
  - `maxKeys` {number} Specifies the maximum number of keys to parse. Specify `0` to remove key counting limitations. **Default:** `1000`.

The `querystring.parse()` method parses a URL query string ( `str` ) into a collection of key and value pairs.

For example, the query string `'foo=bar&abc=xyz&abc=123'` is parsed into:

```
{
  foo: 'bar',
```

```
abc: ['xyz', '123']
}
```

The object returned by the `querystring.parse()` method *does not* prototypically inherit from the JavaScript `Object`. This means that typical `Object` methods such as `obj.toString()`, `obj.hasOwnProperty()`, and others are not defined and *will not work*.

By default, percent-encoded characters within the query string will be assumed to use UTF-8 encoding. If an alternative character encoding is used, then an alternative `decodeURIComponent` option will need to be specified:

```
// Assuming gbkDecodeURIComponent function already exists...

querystring.parse('w=%D6%D0%CE%C4&foo=bar', null, null,
  { decodeURIComponent: gbkDecodeURIComponent });
```

### `querystring.stringify(obj[, sep[, eq[, options]])`

- `obj` {Object} The object to serialize into a URL query string
- `sep` {string} The substring used to delimit key and value pairs in the query string. **Default:** `'&'`.
- `eq` {string}. The substring used to delimit keys and values in the query string. **Default:** `'='`.
- `options`
  - `encodeURIComponent` {Function} The function to use when converting URL-unsafe characters to percent-encoding in the query string. **Default:** `querystring.escape()`.

The `querystring.stringify()` method produces a URL query string from a given `obj` by iterating through the object's "own properties".

It serializes the following types of values passed in `obj`:

`{string|number|bigint|boolean|string[]|number[]|bigint[]|boolean[]}` The numeric values must be finite. Any other input values will be coerced to empty strings.

```
querystring.stringify({ foo: 'bar', baz: ['qux', 'quux'], corge: '' });
// Returns 'foo=bar&baz=qux&baz=quux&corge='

querystring.stringify({ foo: 'bar', baz: 'qux' }, ';', ':');
// Returns 'foo:bar;baz:qux'
```

By default, characters requiring percent-encoding within the query string will be encoded as UTF-8. If an alternative encoding is required, then an alternative `encodeURIComponent` option will need to be specified:

```
// Assuming gbkEncodeURIComponent function already exists,

querystring.stringify({ w: '中文', foo: 'bar' }, null, null,
  { encodeURIComponent: gbkEncodeURIComponent });
```

### `querystring.unescape(str)`

- `str` {string}

The `querystring.unescape()` method performs decoding of URL percent-encoded characters on the given `str`.

The `querystring.unescape()` method is used by `querystring.parse()` and is generally not expected to be used directly. It is exported primarily to allow application code to provide a replacement decoding implementation if necessary by assigning `querystring.unescape` to an alternative function.

By default, the `querystring.unescape()` method will attempt to use the JavaScript built-in `decodeURIComponent()` method to decode. If that fails, a safer equivalent that does not throw on malformed URLs will be used.