Nibble Security: Node.js Connect CSRF bypass abusing methodOverride middleware

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- Published: date not stated
- Original: <https://web.archive.org/web/20160403035045/http://blog.nibblesec.org/2014/05/nodejs-connect-csrf-bypass-abusing.html>
- Current location: <http://blog.nibblesec.org/2014/05/nodejs-connect-csrf-bypass-abusing.html>
- Preserved from: http://blog.nibblesec.org/2014/05/nodejs-connect-csrf-bypass-abusing.html (stored) on 2026-08-09
- Capture timestamp: 20160403035045
- Licence: unknown

Content

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In the previous post, I discussed the importance of well-written documentation and uncomplicated APIs suggesting that poor documentation and negligence should be considered as silent threats.

Almost a year ago, I reported the following issue to the Node.js Connect's maintainers. To me, this is a perfect example of the risks of an incomplete API documentation that doesn't clearly warn the user of potential side-effects. Please note that in the recent releases of Express, *connect-csrf* is now called *csurf *and *methodOverride* is now *method-override*. Different names, same API.

Disclosure timeline

This issue was reported to Senchalabs on 07/25/2013. Despite my requests to add a warning in the online documentation, there's still no indication of potential side-effects in Connect MethodOverride. On 09/07/2013, this advisory was also published by the NodeSecurity community. Unfortunately, I don't think that the issue raised the adequate level of attention as suggested by the many vulnerable applications that I've encountered.

Technical details

Connect's *methodOverride* middleware allows an HTTP request to override the HTTP verb with the value of the **_method** post parameter or with the **x-http-method-override **header. As the

declaration order of middlewares determines the execution stack in Connect, it is possible to abuse this functionality in order to bypass the standard Connect's anti-CSRF protection.

Considering the following code:

```
...
app.use express.csrf()
...
app.use express.methodOverride()
```

Connect's CSRF middleware does not check CSRF tokens in case of idempotent verbs (GET/HEAD/OPTIONS, see csurf/index.js). As a result, it is possible to bypass the security control by sending a GET request with a POST MethodOverride header or parameter.

```
GET / HTTP/1.1
[..]
_method=POST
```

The workaround is clearly to disable methodOverride or make sure that it takes precedence over other middleware declarations.

Adam Baldwin made an eslint plugin that you can use to identify this issue.

Update 06/04: Douglas W. pointed out that it's probably a good idea to move to method-override version 2+ (https://www.npmjs.org/package/method-override#readme). The documentation has been updated with a reference to this issue.
